PROGRESS REPORT

ON

FOREST ADMINISTRATION

IN

UPPER BURMA

FOR

1887-88.

BY H. C. HILL, ESQ., CONSERVATOR OF FORESTS.

WITH A REVIEW BY THE CHIEF COMMISSIONER, AND THE ORDERS OF THE GOVERNMENT OF INDIA.

RANGOON:
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1889.

No. 1067F., dated Simla, the 25th October 1888.

From—W. R. LAWRENCE, Esq., C. S., Officiating Secretary to the Government of India, Revenue and Agricultural Department,

To—The Chief Commissioner of Burma.

I AM directed to acknowledge the receipt of Mr. Kynoch's letter No. 589-36-M., dated the 21st ultimo, submitting a further formal Report on Forest Administration in Upper Burma for 1887-88, with your Resolution thereon. The Government of India has already noted* its appreciation of the year's work on the preliminary Report submitted with Mr. Thirkell-White's letter, No. 533, dated the 21st August last, and a few remarks only are now required in addition thereto.

* Letter No. 964-F., dated 28th September 1888.

2. The Government of India is pleased to see that no time has been lost in taking practical preliminary steps towards the constitution of finally-settled forest estates, by a general exploration and examination of the position and value of the forests in the newly acquired country.

The Conservator's Report gives a good general idea of the forests placed under the control of the Department.

3. Taking the difficult circumstances of the case into consideration, the progress made in topographical and valuation surveys is satisfactory. The results, however, of the latter seem to show that the number of girdled trees standing in the forests represent 5 to 20 times the normal annual outturn, that a large percentage of the trees killed are undersized, and that a considerable proportion of the first class trees enumerated are rejections of former girdlings.

4. The Government of India joins in the satisfaction expressed by you in regard to the careful working of the Forest Regulation and Rules on their first introduction, and trusts that further attempts to enlist the help of the people in excluding forest fires will prove successful. There can be no doubt that success in this depends to a considerable extent on the good-will of the population.

5. It is understood that the Forest Department was not in a position to undertake the girdling operations in the Upper Chindwin forests, nor prepared to acknowledge a sufficiency of girdled timber, and that, under these circumstances, you permitted the Bombay-Burma Trading Corporation to girdle 37,000 trees in those forests, of which 26,500 were actually girdled. This was unavoidable; but the Government of India is glad that you have decided, in reference to all future girdling operations, that they shall be exclusively carried out by the Forest Department, who will be guided, in that connection, by considerations of sylvicultural expediency, and not merely by those of facility of extraction.

6. The paragraphs treating of the removal of timber and produce by local purchasers show that the question of local trade and of the revenue derivable therefrom has not been entirely subordinated to the larger question of important exports. The leases granted under the late Government no doubt hamper the working of the Department, and hinder to a considerable extent the introduction of scientific forestry; but these are circumstances which must be faced, and it is a matter for congratulation that a final settlement has been arrived at with the largest lease-holders (the Bombay-Burma Trading Corporation) on terms which remove many of the obstacles against the introduction of practical measures for the protection and preservation of the forests leased by them, and which prevent their being overworked. There would seem to be no difficulty now as regards the settlement with other lessees.

7. The financial results of the year's working show satisfactory progress, and, since the liabilities attaching to the Forest property, as inherited from the late Government, have been adjusted during the course of 1888-89, a large increase in the net revenue may safely be expected.

8. The cordial co-operation of the officers of the Pegu Circle has been noticed by the Government of India.

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RESOLUTION

ON THE

FOREST ADMINISTRATION PROGRESS REPORT

OF

UPPER BURMA

For the year 1887-88.

Extract from the Proceedings of the Chief Commissioner in the Forest Department,—No. 36M., dated the 17th September 1888.

READ—

The Report by the Conservator of Forests, Upper Burma Circle, on the forest administration of Upper Burma for the year 1887-88.

RESOLUTION.—The present report, which was received on the 14th July 1888, is the first regular report on the Upper Burma forest administration that has been prepared since the annexation, Upper Burma having only been formed into a forest circle and placed in charge of a Conservator (Mr. H. C. Hill) in March 1887. The area under the control of the Conservator comprises roughly the whole of the territory commonly called Upper Burma, and extends from the old frontier line above the station of Thayetmyo known as the Myedè parallel northwards to an indefinite point beyond Bhamo, and from the ranges of hills forming the eastern limit of Bengal and Assam eastward to the watershed of the river Salween. The principal forests lie in the tracts of country forming the upper basin of the rivers Irrawaddy and Sittang and their tributaries, and on the banks of the Salween river. The most valuable of these forests were leased by the Burmese Government to various European and Native traders and trading companies, and the terms on which the lessees shall be allowed to retain their interest in the forests are now in process of final settlement. The present report contains an account as far as materials are at present available of the several forests in Upper Burma.

Organization of Upper Burma forest staff.

2. For some time after the annexation of the country the forest revenue was collected under executive orders of the Chief Commissioner. In August 1887 the Upper Burma Forest Regulation, 1887, became law and rules were framed under it. To carry out its provisions a staff of officers has been sanctioned consisting nominally of 2 Conservators and 19 Deputy and Assistant Conservators; but the number of officers actually on duty at the present time is 1 Conservator and 10 Deputy and Assistant Conservators, besides 5 Sub-Assistant Conservators. The full complement will be gradually worked up to as circumstances demand and new forest divisions are formed. At present there are seven forest divisions.

General Results.

General results of the year's work.

3. At present the work of Forest Officers in Upper Burma is to a great extent confined to the prevention of breaches of the Forest Regulation and Rules, the explanation of the forest system to the people of the country, the examination of the resources of the forests with a view to their future development, and the collection of revenue on forest produce extracted from forests not included in the leased areas. The fact that so much valuable forest is in the hands of lessees hampers the working of the department and hinders the introduction of scientific forestry and of practical measures for the protection and preservation of the forests. This obstacle will gradually disappear. Meanwhile much good may be done by the preparation of plans for the future and by the adoption of the means furnished by the law to safeguard the interests of the people and of the State by preventing the overworking of the leased forests. The powers of the lessees are in all cases controlled by the Regulation and Rules, and care will be taken that the forests are not worked to exhaustion. During the year under review no forest reserves were actually formed, but proposals were sanctioned for the reservation of about 8,000 acres of oak and chestnut forests in the Ruby Mines district for the supply of firewood and building timber to meet local wants, and in another part of the district an area of some 14,000 acres of similar forest has been selected, while surveys of considerable areas have been made in three districts with a view to the formation of teak and cutch reserves. No girdling work was done by Government agency, but the Bombay Burma Trading Corporation girdled, with the permission of Government, 26,500 teak trees in the Chindwin forests, of which they are the lessees. The gross revenue of the year amounted to Rs. 2,96,876 and the outlay to Rs. 1,21,152. Very little teak was worked out by Government agency, but lessees and local purchasers extracted 76,967 tons.

Surveys and Working Plans.

Surveys and working-plans.

4. The details given in paragraphs 14 and 15 of the report show that much valuable survey work was done by several Divisional Officers during the year. There is urgent need for the protection of cutch in view of the exhausted condition of the cutch tracts in Lower Burma and proposals for the reservation of cutch areas are invited. The Conservator recently brought to notice that large numbers of cutch saplings were being cut in Upper Burma for fuel and for consumption on board river steamers belonging to private persons and companies. A rule has accordingly been issued under section 34 (2) (*c*) of the Upper Burma Forest Regulation prohibiting the practice.

Offences against Forest Rules and Fire-protection.

Forest offences. Fire-protection.

5. The Chief Commissioner appreciates the care which has been taken to work the Regulation and Rules during the first months after their introduction in such a way as not to unduly harass the people. The rules only came into force in August last and can be but little known yet. The Conservator is about to draft a short digest of them prepared in simple language for general distribution in the districts.

As the country becomes more settled and the people become more accustomed to the new law the Regulation and Rules will be more strictly enforced. It is subject for regret that the attempt to enlist the help of the people in the Pyinmana division in protecting a young teak tract from fire was unsuccessful.

EXPERIMENTAL CULTIVATION.

Experimental cultivation.

6. The experiments made with Indian and English fruit trees at Bernardmyo and Mogôk are interesting and should be carefully watched.

GIRDLING OPERATIONS.

Girdling operations.

7. The only girdling operations during the year were carried out by the Bombay Burma Trading Corporation in the Chindwin forests held under lease by them. Permission had been given to the Corporation to girdle 37,000 trees there and 26,500 trees were actually girdled. In future, under the new agreement which has now been concluded, the girdling will be done by the Forest Department, and not by the Corporation, in all the forests of which they hold leases.

TIMBER WORKED OUT OF THE FORESTS.

Outturn of timber.

8. The following figures show the quantity of timber, both teak and other kinds, extracted from the Upper Burma forests in 1887-88:—

Division.	Teak.	Other reserved kinds.	Unreserved kinds.	Firewood and charcoal.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.
By Government agency ...	118	...	...	...	118
By licensees under the *ex*-Burmese Government.	44,304	...	...	...	44,304
By local purchasers	32,668	210	2,309	17,570	52,752
Under free permits	338	...	...	...	338
Sent to Lower Burma, paying import duty.	961	2	...	...	963
Total ...	78,379	212	2,309	17,570	98,470

Of the teak extracted by leaseholders 39,359 tons were worked out by the Bombay Burma Trading Corporation, chiefly from the Pyinmana forests, compared with 38,986 tons extracted by them in the previous year, when the bulk of it came from the Chindwin forests. As might be expected the impetus given to house-building in Mandalay and elsewhere, as a consequence of the annexation, and the construction of barracks and other military buildings by the Public Works Department, caused a great demand for teak, of which 32,873 tons were removed from the forests by local purchasers during the year.

REVENUE AND EXPENDITURE.

Revenue and expenditure.

9. No comparison of any value can be made between the forest revenue and charges of Upper Burma in 1886-87 and 1887-88, no attempt at departmental organization or control having been made in the former year, the forest revenue in which year was Rs. 1,08,074, of which Rs. 1,00,000 was paid as rental by one of the leaseholders

under the *ex*-King, and the balance was got by the sale of some timber that came into the hands of our officers at the annexation.

The estimated receipts and expenditure of the Upper Burma forest circle, provisionally sanctioned by the Government of India for 1887-88, were—

	Rs.	Rs.
Receipts	...	3,27,000
Charges A	93,000	
Charges B	91,000	
		1,84,000
Surplus ...		1,43,000

The actual revenue and expenditure have proved to be—

	Rs.	Rs.
Revenue	...	2,96,876
Expenditure A	44,218	
Expenditure B	76,934	
		1,21,152
Surplus ...		1,75,724

Of the revenue Rs. 1,12,000 consisted of lump-sums paid on account of rental by three of the *ex*-King's leaseholders. The balance was obtained mainly from duty on teak timber from the Bhamo division, and partly from cutch licenses and from bamboos, charcoal, and firewood. The above revenue includes no payments by the Bombay Burma Trading Corporation on account of the leases held by them as no final settlement of terms with the Corporation had been arrived at until after the close of the year, nor does it include the sum of Rs. 1,00,000 paid to Government for the Mogaung India-rubber monopoly for the year ending the 15th October 1888, after which date the monopoly will be abolished and a duty levied at Bhamo on all rubber brought down from the forests as is already the practice in the Chindwin district. The expenditure was much less than the estimate. Fewer controlling officers actually joined the circle than had been reckoned on, fewer divisions could therefore be formed, and less outlay was incurred in organizing establishments. Some progress was made in providing offices and dwelling-houses for Divisional Officers. The forest budget estimate of the Upper Burma circle for 1888-89, provisionally sanctioned by the Government of India, provides for a surplus of Rs. 4,95,000, which it is expected will be realized.

10. The Chief Commissioner has read Mr. Hill's present report with much interest. It is a record of good work done under difficult circumstances, and shows that already a substantial advance has been made in the organization and development of an efficient forest administration in Upper Burma.

By order of the Chief Commissioner,

H. THIRKELL WHITE,

Officiating Chief Secretary.

PROGRESS REPORT

OF

FOREST ADMINISTRATION

IN

UPPER BURMA

FOR

The year 1887-88.

BY

H. C. HILL, Esq., Conservator of Forests.

INTRODUCTION.

History of previous year.

THIS report continues the history of the forest administration of Upper Burma from the date up to which it was disposed of by the Inspector-General's memorandum to the Chief Commissioner, dated the 9th March 1887. During the financial year 1886-87 instalments from licensees, amounting to Rs. 1,00,000, and Rs. 8,074 realized from the sale of Royal timber and certain items on account of cutch, were credited in the accounts of the Pegu circle, and that circle incurred an expenditure of Rs. 2,188 on account of the services of a Sub-Assistant Conservator temporarily employed at Mandalay and on the realization of the above revenue.

Difficulties met with and provision of armed escorts.

2. The year under review has for many reasons been marked by very uneven progress under the various heads in the different divisions. The many difficulties and obstacles that have beset officers have been the outcome of the necessity for armed escorts and the trouble involved in arranging transport for rations and a large following. The suggestion of the Inspector-General for organizing an armed Forest subordinate establishment of sufficient strength to protect themselves and form a guard to European officers was not acted upon. It was considered that the Police Department had much greater facilities for training, equipping, and provisioning an armed body of men, and that as probably never more than 200 men would be required at one time, and these in small escorts here and there throughout the circle, there would under ordinary circumstances be no difficulty in supplying them. On the whole the arrangement has worked well, and both civil and military police officers have combined to give all the help in their power; but in some instances the Forest Officers' requirements have of necessity had to give way to more urgent demands on the police; in others the officers responsible, in view of the unvisited and unknown localities of the forests, have insisted on a guard of such magnitude that to march with it to any distance, fully provisioned for the necessary time, has involved transport arrangements beyond the possible means of the thinly peopled forest tracts. Political reasons prevented one officer from visiting the most valuable forests of his charge which lie within the territory of a Sawbwa whose susceptibilities had to be considered. There has been the general hampering of field work caused by the knowledge that dacoits might be met with at any turn and had to be prepared for, and the many other lesser blocks to progress inseparable from the commencement of operations in a new country. That the year should have been passed without casualty is matter for congratulation.

It is not proposed to explain under each division the actual circumstances that may have led to apparent want of progress in any special direction, but it is asked that the year's work may be judged with all due consideration of the above remarks.

CHAPTER I.

AREA AND BOUNDARIES.

(a).—*Area.*

1.—PROTECTED FORESTS.

Explanation of Form No. 49.

3. An endeavour has been made to enumerate such forest tracts as benefit by the protection afforded by Chapter IV of the Regulation and which will in part or whole go to form the reserves of the future. For convenience they have been tabulated in Form No. 49 and, where possible, an estimated area, in square miles only, has been entered.

Description of the forests of the Bhamo division.

4. The Sinbo, Mogaung, and Mohnyin forests are all said to be rich in teak of good size and quality. Ko Tu, the licensee of the forests of the Mogaung subdivision, reports that 30,000 girdled trees and 10,000 dead and windfall stand ready for extraction. The Mohnyin forests fall within the area covered by the license of Maung Mun Htaw and Maung Bauk, but at present they are only being worked by Kachins, who extract for local sale. All other forests of the division are known to have been, and are being, heavily worked, but as yet they have not been visited.

Description of the forests of the Chindwin division.

5. The Chindwin forests have been worked for about six years by Messrs. The Bombay Burma Trading Corporation, Limited, whose license still runs, but the country is only partially known and many of the finest valleys have not been explored. Teak is said to be scarce on the Chindwin proper, north of Homalin, although it is abundant on the Uru river, the source of which lies considerably north of Homalin.

The following is a list of the principal streams draining forest tracts with any particulars that are reported about them or their drainage area :—

I. *Uru river.*—A large river draining an extensive teak-producing area to the east and joining the Chindwin a few miles below Homalin. Fifty miles from its mouth it is joined by the Kyaungmagyi chaung, which is said to take its rise in Wuntho territory. It is impossible to estimate the area as the country has never been explored by any European. It has never been worked except for local requirements, though there is said to be a good deal of small, old girdled teak.

II. *Nanthamyit chaung.*—A large western tributary flowing through the territory of the Thaungdut Sawbwa and debouching a few miles above Thaungdut. Area unknown. The forest has never yet been worked.

III. *Nankamu chaung.*—A very large eastern feeder which joins the Chindwin a few miles above Sittaung. It is unknown and unworked.

IV. *Yu river.*—A large western tributary the upper reaches of which drain the Kubo valley. It has many large feeders, such as the Dathwèkyaung, Yontin Kyauktaing, Tamaungtha, &c., in which Messrs. The Bombay Burma Trading Corporation, Limited, have been working for some years.

V. *Kodan chaung.*—A large eastern tributary with two large branches, one of which rises in the Mahamyaing and the other to the east of Kindat, said to drain a fine teak tract, but logs cannot be floated out. It has yielded a few dubbed squares.

VI. *Nanzalein chaung, Paluswa chaung, Nantahin chaung.*—Three small western tributaries debouching opposite Masein. Area about 180 square miles. They have been worked for some years by Messrs. The Bombay Burma Trading Corporation, Limited, and produce first class timber. There are said to be 7,000 girdled trees left and 10,000 more over 6 feet in girth ready for girdling. In the

streams are 3,000 neaped logs : 587 logs came out during last rains. Of the neaped logs a very small proportion is yatthits. There is little or no *indaing* on these streams and the whole area is suitable for reservation. The forest is generally dry on the ridges, moist and evergreen along the banks of the streams. The three streams rise on the same hills, flow east, and join the Chindwin within 20 miles of each other. In each case the stream is excellent for floating up above, but rocky for the last 3 miles, where it passes through a low hill range. All classes of teak are well represented. There is, however, a large number of trees over 6 feet in girth which can never be girdled owing to their defects. There are large numbers of small teak girdled in Burmese times. The girdlings carried out by the Corporation's Agents seemed well done.

VII. *Myittha river.*—This is the largest tributary of the Chindwin and drains a vast extent of country, the area of which cannot be estimated. It meets the Chindwin at Kalèwa. It has many and important tributaries, but only a few (the Bôn, Yazagyo, &c.) have been worked as yet through fear of the Chins. Last year's outturn amounted only to 198 logs. The neaped logs are reported to number about 10,000.

VIII. *Taungdwin chaung.*—A western tributary joining the Chindwin about 15 miles above Mingin. Area estimated at 600 square miles, of which all but a small proportion is well stocked with teak and could at once be taken up as a reserve. There are only three small villages (Kyaungma, Paya, and Zenepôk) which would have to be demarcated out. This stream has been worked for many years by Messrs. The Bombay Burma Trading Corporation, Limited, and there is still ample girdled material for several years' work. Two or three thousand trees could be girdled on the Kyan, Pomwe, and Tinshu chaungs, but then the forest would have to be closed for some time as the smaller classes have suffered very much from indiscriminate girdling. Last year's outturn amounted to only 281 logs ; there are 6,200 neaped logs.

IX. *Patalôn chaung.*—A large western tributary debouching 4 miles below Mingin, has many large feeders, and drains an area of country estimated at 1,000 square miles. It has been worked for some years by Messrs. The Bombay Burma Trading Corporation, Limited, but there are many narrow channels where large obstructions are annually formed, and these make the working of the upper reaches a difficult and costly undertaking. It was in this stream that 6,000 (reported) neaped logs were burnt during the hot weather of 1887. Between the mouth of the creek and Baingbin there is not an acre of teak forest near the main stream. The teak here is confined to a narrow belt about 2 miles broad running along the tops of the eastern watershed from above Matu village. Above Baingbin the stream turns to the west and the teak forests come down much lower. It is impossible to say what proportion of the forest is available for reservation, but probably not more than 50 per cent. of the whole area. Last year's outturn was 1,182 logs ; there are 13,000 neaped logs ; old girdled (marketable) trees are estimated at 15,000.

X. *Mahamyaing forests.*—A large, extensive, undefined tract of country lying to the north-east of Maukadaw on the east bank of the Chindwin, produces magnificent teak timber, but the streams are said to be useless for floating. A small amount of timber is extracted in the form of dubbed squares.

XI. *Thingadôn chaung.*—A western feeder meeting the Chindwin about 15 miles from Maukadaw. Area estimated at 100 square miles. A very dry forest, but produces good teak ; contains 870 neaped logs.

Description of the forests of the Mandalay division.

6. The Panlaung-Myittha forests, held in part by the executors of the late Mr. Walker and U Kawi and in part by Messrs. The Bombay Burma Trading Corporation, cover a considerable area. Teak is found by no means generally. The country is very broken and much intersected with precipitous barren limestone hills, and with *indaing* forest of inferior quality. The actual teak forests are small, scattered, and for the most part overworked. There are parts rich in padauk, which should be included in reserves when the selection of these is undertaken.

The teak forests of the Zawgyi valley are believed to be of very limited extent. The Pyaungshu forests are as yet unexplored, and stories of their exceptional richness in teak are current; but from the statement of a forester who has worked there the actual teak forests are small and scattered and, like those of the Panlaung, difficult to work with elephants owing to the precipitous nature of the hills and rocky minor streams.

In the Madeya forests, so far as they have been examined, teak is sprinkled in small patches over large areas, and no compact and at the same time extensive teak tracts are found.

Description of the forests of the Minbu division.

7. The protected forests comprise the teak forests worked by Messrs. The Bombay Burma Trading Corporation, Limited, and the cutch-growing lands which cover a large area in both the Taungdwingyi and Minbu districts.

The teak forests are situated on the Sadôn, Ngamin, and Yabè chaungs of the Taungdwingyi district, and on the Môn, Man, and Salin chaungs of the Minbu district. These latter are not being worked and have not been examined. In the Taungdwingyi district the teak forests have been very heavily worked, every marketable tree being girdled and for the most part felled. A considerable number of logs are lying in the streams.

Cutch grows pretty generally over the Minbu division, but for the most part all trees fit for boiling have been exploited. The cutch business on the Ngamin, Sadôn, and Ye-u chaungs has led to cart-tracts being opened out yearly from Taungdwingyi right up to the Yoma ridge, and by this means the forests have been completely worked out. There is the usual free reproduction of the tree in spite of the annual fires; and if reserved, these forests will very rapidly recover their value as cutch-producing areas and gradually grow a certain proportion of teak.

Description of the forests of the Mu division.

8. In the Ye-u district the forests known as Yabin, Pyaungthwè, and Maingwun comprise valuable teak-producing areas, 188 square miles of which have been selected for reservation. Some 8,000 teak are reported to have been girdled within recent years in these forests.

South of these *Melanarrhœa usitata* (thitsi) is abundant and much worked. The only forests of any value in the Shwebo district are those lying immediately south of the Kawlin boundary, on the ridge forming the watershed between the Mu and Irrawaddy rivers known as the Hnetpyitdaung forests. They were only worked by the Mu licensees for one year as the teak timber was found to be small and floating difficult. The slopes on the Irrawaddy side are worked by Maung Mun Htaw and Maung Bauk by way of the Zin chaung. They contain padauk and cutch in considerable quantity.

In the Kawlin district, near the Wuntho Sawbaw's territory, the Thaw and Daungyo forests are reported to be very rich in teak with some padauk and cutch. These are being worked by Messrs. The Bombay Burma Trading Corporation, but next to nothing is known of them as yet.

Description of the forests of the Pyinmana division.

9. Within the limits of the Pyinmana division are to be met with all gradations of forest from the moist evergreen forests in the deep ravines and on sheltered slopes of the Yomas to the dry scrub-growth of the Yamèthin plain.

Teak is pretty general all over the Pyinmana district except in the stretch of country in the vicinity of the Sittang river and along the watersheds between the main feeders, which are principally occupied by *indaing*, the low-lying lands being either grass jungle or paddy cultivation. In the Yamèthin district it is almost entirely absent and what teak there is is badly grown and stunted; it occurs there only towards the eastern and western edges of the district.

Cutch is abundant in the vicinity of the Sinthè and a vein of it stretches south along the banks of the Sittang to the Yeni chaung. It is distributed more or less all over the southern half of the Yamèthin district.

The following species are fairly represented in the evergreen forests of the Ngaleik and Palwè chaungs :—

Thingan (*Hopea odorata*) ;
Kaunghmu (*Parashorea stellata*) ;
Thitka (*Pentace Burmanica*) ; and
Padauk (*Pterocarpus indica*).

The rainfall measured at Pyinmana last year was 56·3 inches ; the year before it was also about 55 inches ; but the register was not started till some time in June.

The chief teak-producing localities from which it is proposed should be formed the reserves of this division are—

I.—The Yeni forest, drained by the Yeni chaung, with the Hmauku chaung as the principal feeder on the south and Thebyu chaung on the north, includes an area of 80 square miles. Almost the whole of the tract is teak-producing and the best grown teak of the district is found here. It was one of the first localities in which work was started about 33 years ago. The mature trees have all been worked out and it is practically exhausted, but with reservation and treatment it may yet be made a very rich teak tract.

II.—The Myinbyin forest, drained by the Myinbyin chaung, with the Kyaukmasin and Thebyu chaungs as the principal feeders from the south, comprises an area of 185 square miles. More than 80 per cent. of the area is teak-producing. There are some fairly large tracts of *indaing* towards the Yoma, but it would serve no purpose to exclude them from reserves. Several inhabited villages lie within this area and would have to be demarcated out.

III.—The Yônbin forest, drained by the Kyauktalôn, Chaungmangè, and Tho chaungs, which unite and form the Yobin chaung, with an area of 130 square miles. About 70 per cent. of this tract is teak-producing. Except towards the Yoma, the mature teak has practically all been worked out.

IV.—The Palwè forest, drained by the Palwè chaung. This tract has not been explored. A reserve can be formed which will probably include an area of about 100 square miles.

V.—The Kain forest, drained by the Bugwe chaung, contains some very promising patches of teak with an area of 45 square miles. Within this area are included several villages and deserted paddy-fields which would have to be dealt with.

VI.—Ngaleik forest, drained by the Ngaleik chaung, with numerous feeders, the boundaries of which would include an area of 100 square miles. The northern portion of this tract has not been explored, but of that which has 80 per cent. is teak-producing and it includes some very promising growth.

VII.—The Taungnyo forest, drained by the Taungnyo chaung, with the Bodet as principal feeder from the west and the Pinthè and Taungdain from the east. The boundaries of a reserve would probably include an area of some 130 square miles.

VIII.—The Pozantaung forest, drained by the Kyidaungan chaung, the Setsayo chaung, and the Chaungmègyi chaung, with an area of about 80 square miles.

IX.—The Paunglaung forest, drained by the numerous tributaries of the Sittang river. This region has not yet been explored.

In the Yamèthin district teak does not appear to thrive, the trees are few and far between, and generally stunted and badly grown. The localities containing teak and cutch from which the reserves in this district may ultimately be selected are—

(i) the Myohla forest drained by the Myohla chaung ;

(ii) the Shwemindin forest, embracing an area of about 20 square miles, of which about 30 per cent. is teak-producing, the remainder containing among other species *ingin* and *pyinkado*. The tract requires to be examined ;

(iii) the Kyinzu forest, of which 30 per cent. is teak-producing ;

(iv) the Sinthè forest, partly in the Pyinmana and partly in the Yamèthin district, includes both teak and cutch producing localities. The area covers some 200 square miles.

Description of the forests of the Yaw division.

10. It is known that the forests of the Yaw and Kyaw valleys as well as of the Mau and Myittha produce considerable quantities of teak and cutch, but as yet only the roughest estimate of their extent has been formed.

2.—UNCLASSED FORESTS.

Description of the forests of the Ruby Mines district.

11. The only forests of this class calling for notice are those of the Ruby Mines district which have been preliminarily marked off for reservation with the object of supplying Bernardmyo and the villages of the Ruby Mines with building material and fuel. They are of two distinct kinds. The dense well-grown evergreen forest at an altitude of 5,500 to 6,500 feet comprises species of the genera cinnamomum, machilus, alsodaphne, taxus, &c., and yields building material. The lower forests at an altitude of from 4,000 to 5,500 feet are stocked with oaks, chestnuts, schima crinata, pinus kasya, &c., and are suitable for the production of fuel with some proportion of large timber.

Proposals for reservation in the Ruby Mines district.

12. The proposed reserves in the Mogôk valley aggregate an area of 5,560 acres, of which only two-thirds, or 3,707 acres, are estimated to be stocked at present. They include a belt of evergreen forest south of the Taungmè ridge, but comprise for the most part oak and chestnut forests. These tracts have been preliminarily notified and a Forest Settlement Officer has been appointed to dispose of them (*vide* Notification No. 35, dated the 3rd May 1888).

Proposals have also been submitted for the reservation of 2,440 acres of oak and chestnut forest in the Kathè-Kyapin valley. Of this area about one-third is at present blank.

On the Bernardmyo side, that is, to the north of Taungmè ridge, 14,388 acres, inclusive of some 4,000 acres of blanks, have been selected for reservation. A little less than half the area is evergreen forest, the remainder growing oaks, chestnuts, and a few firs.

(*b*).—*Boundaries.*

No boundary marks erected.

13. There has been no marking of boundaries beyond the temporary laying down of the limits of proposed reserves.

CHAPTER II.

SURVEYS, WORKING PLANS, AND ANNUAL PLANS OF OPERATIONS.

(*a*).—*Topographical Surveys.*

General remarks.

14. The chief progress under this head has been made in the Pyinmana, Minbu, and Mu divisions.

Mr. Copeland has run traverses wherever he has been and the result is a fairly accurate skeleton map of the entire Pyinmana district west of the railway line. It shows broadly the teak-producing localities as apart from the *indaing*, and also the sites of all villages and cultivation in the neighbourhood. For the purposes of reservation it will suffice with some slight additions. A similar map has resulted from Mr. Muriel's traverses in the forests between Taungdwingyi and the Yoma, and these abut the Pyinmana district. The two maps complete the forest tracts of the Pegu Yoma north of the old frontier.

Detail of surveys by divisions.

15. *Bhamo division.*—No surveys of any sort were undertaken during the year; the Divisional Officer was occupied for several months in accompanying the expedition to the jade-mines and Indawgyi.

Chindwin division.—Surveys are reported to have been carried out to a greater or lesser extent in the Nanzalein, Paluswa, Nantahin, Taungdwin, and Patalôn forests. They have no pretence to accuracy except in the two latter

valleys, where the plane table and chain were used over some 47 miles. Elsewhere the distances were estimated, bearings taken occasionally, and mere sketch-maps were produced.

Mandalay division.—About 70 square miles were surveyed with plane table and chain in the Ruby Mines district. This area comprises all the forests near Bernardmyo and the Ruby Mines valley, and the maps have been utilized in making proposals for reservation.

Minbu division.—Traverse lines, aggregating 168½ miles, were run over about 600 square miles of the forest tracts of the Taungdwingyi district. The field sheets were plotted on the scale of 2 inches=1 mile where the forest contained teak and cutch and appeared of sufficient value to form reserves. In less valuable forest-land and where the traverses were run merely for the sake of connection with Taungdwingyi or other known places a scale of ½ inch=1 mile was adopted.

Mu division.—Maps of the Yabin, Pyaungthwè, and Maingwun forests were produced on the scale of 1 inch=1 mile and cover an area surveyed with chain and plane table of 188 square miles.

Pyinmana division.—A traverse was made with the plane table on the scale of 2 inches to the mile starting from Gyobin, on the Toungoo-Mandalay railway, westwards to the Yoma, then northwards along the Yoma to the Sinthè chaung, then eastwards, and finally closed at Shwemyo on the railway, thus with the railway traverse completing a circuit of the Pyinmana district west of the Sittang river.

Offshoot surveys and tie lines have also been run here and there with the plane table and prismatic compass, and with the help of rough sketch surveys and the military reconnaissance map a fairly accurate map of the district has been compiled.

The plane-table surveys go over a distance of about 220 miles, the prismatic compass over 70 miles, and the railway traverse over 40 miles, in all 330 miles. The area included within this circuit is 1,250 square miles and takes in the principal teak-producing localities of the division.

Yaw division.—No progress has been made under this head and the only maps available are those of the lines followed by expeditionary forces.

(*b*).—*Valuation Surveys.*

Valuation surveys and their object.

16. Linear surveys were made and countings recorded in the Chindwin, Mandalay, Mu, and Pyinmana divisions only. The immediate object of these was less to value the forests than to ascertain roughly the proportions of living teak of different ages to girdled and dead teak and to teak stumps. From these data when recorded over a sufficient area in any particular forest it will be possible to decide whether girdlings have already attained to or exceeded the possibility of the forest. Such a forest can then be left for the present and the preparation of working plans confined to those forests whose capabilities give promise of an immediate yield of green teak.

Practical application of results obtained.

17. The results are given in Appendix C, and although the countings are admittedly on too small a scale as yet to justify their application, it may be permissible to indicate broadly the practical bearing they tend to have on the question of girdling in forests held by licensees.

Taking the rotation at 120 years by way of illustration and assuming that a tree—

at 30 years enters the IV class 1′—6″ in girth;
at 60 years enters the III class 3′—0″ in girth;
at 90 years enters the II class 4′—6″ in girth;
at 120 years enters the I class 6′—0″ in girth;

then we may assume that all the I class trees and a proportion of the II class, say one-fifth, may be removed within the next 30 years. It is not at all certain that the rotation for most of the forests should not be 160 years and the corresponding period of 40 years.

The Pyaungthwè forest of the Mu division shows I class 191 + $\frac{1}{5}$ II class (125) + 40 girdled = 256 trees for the first period, and the girdled trees represent the outturn of nearly five years.

The Taungnyo forest of the Pyinmana division shows I class 45 + $\frac{1}{5}$ II class (69) + 27 girdled = 86 trees for the first period, and the girdled trees represent the outturn of nine years, while the stumps, 147, show that the forest has been worked at a higher pressure in the immediate past.

The Yeni forest of the Pyinmana division shows 1st class 39 + $\frac{1}{5}$ 2nd class (45) + 110 girdled = 158 trees for the first period, of which 110, or a 20 years' supply, stand girdled.

The distribution of II, III, and IV classes has purposely not been considered in the above rough illustrations. Its importance has not, however, been overlooked.

Rough general application to all orests in the Pyinmana district.

18. Taking the total results so far obtained over all the forests of the Pyinmana district the following general averages are arrived at:—

Girdled trees	...	...	1·0	2·7 stock removed or killed. } 3·3 total mature crop.
Stumps	...	...	1·7	
I class	...	...	·6	= mature growing stock
II class	...	...	1·1	
III class	...	...	1·2	
IV class	...	...	8·0	

This would show that out of every 33 mature trees 27 have already been removed or killed.

The number of girdled trees left in the forest would be for the 560,000 acres of teak-producing forest in the Pyinmana district (as shown in Form No. 49) at 1 per acre 560,000 trees.

About 50 per cent. of the I class trees enumerated are such as are not fit to cut, in fact they are rejections of former girdlings, being either *nyaungbat* (stifled by ficus creepers), hollow, or low-branching.

In the case of the Taungnyo forest nearly three-fifths of the girdled trees were found to be undersized, and generally it would not be putting it at too high a figure to say that one-sixth of the girdled trees in Pyinmana are undersized.

(c) *and* (d).—*Working Plans and Annual Plans of Operations.*

Nothing to record.

19. As yet there is nothing to record under these heads.

CHAPTER III.

PROTECTION AND IMPROVEMENT.

(a).—*Establishment.*

Gazetted officers.

20. Mr. H. C. Hill assumed charge of the Upper Burma circle on the 26th March 1887 and, as officers have been appointed, seven divisional charges, in addition to the Direction division, have been gradually organized. The following tabular statement shows the divisions and subdivisions constituted at the close of the year together with the officers in charge and the dates on which they assumed their duties:—

Division.	District.	Officer.	Date of formation.	Subdivision.	Officer.	Date of formation.
Bhamo	Bhamo ...	Mr. C. W. Palmer	1st October 1887...	Myadaung ...	Vacant	
	Myadaung ...					
	Part Ruby Mines					
Chindwin	Upper Chindwin	Mr. H. Slade ...	16th May 1887 ...	Kindat ...	Mr. G. F. B Blackwell.	24th March 1888.
	Lower Chindwin					
	Part Myingyan ...					
Mandalay	Mandalay ...	Mr. H. Calthrop ...	14th April 1887	Ruby Mines ...	Mr. E. M. Buchanan.	13th May 1887.
	Kyaukse ...			Mandalay revenue station	Mr. R. C. Dun ...	24th December 1887
	Meiktila ...			Panlaung-Myittha	Vacant.	
	Part Ruby Mines					
Minbu	Minbu ...	Mr. C. E. Muriel...	21st April 1887 ...	Taungdwingyi ...	Vacant.	
	Taungdwingyi ...					
Mu	Shwebo ...	Mr. J. Murray ...	1st July 1887 ...	.....	.....	
	Ye-u					
Pyinmana	Pyinmana ...	Mr. J. Copeland ...	19th May 1887 ...	Yamèthin ...	Mr. C. L. Touissaint.	28th March 1888.
	Yamèthin ...					
Yaw	Pagan ...	Mr. L. A. W. Rind	28th November 1887.	.....	.....	
	Part Myingyan ...					

21. Proposals were submitted for the entertainment from the 1st September 1887 of a provisional permanent establishment costing monthly—

Subordinate establishments.

	Rs.
Forest and depôt establishment, BIc	2,181
Office establishment, BI*d*	1,537½

This was sanctioned temporarily by the Government of India and men were entertained as required. The actual amount expended for the six months was only—

	Rs.
BIc	4,080
BI*d*	5,833

Requirements prior to the 1st September 1887 were met by the employment of temporary establishment sanctioned by the local Government and actually costing—

	Rs.
AVI*b*	69
BIc	803
BI*d*	1,986

There was a further expenditure of—

AVI*b*	1,314
BI*d*	585

on establishments of a purely temporary nature with which, under the orders of the Chief Commissioner, the regular establishment was supplemented from September to February.

The organization of the department and especially the employment of subordinates was very much retarded by the paucity of gazetted officers appointed in the first instance and the delay in bringing the necessary staff to anything approaching completion. Subordinates at the very commencement of operations could be trusted to do nothing, and there was no use in appointing them without the closest European supervision. They would either have declined to move out into the district or considered their appointments endowed with all the benefices customary to the Burmese rule and proceeded to collect revenue on their own account.

The provisional permanent staff, in so far as forest and depôt establishments go, is purely tentative. It will have to be doubled at least as the forests are brought within touch, and their stricter protection as reserves has to be arranged for. Some early additions to office establishments, which have been fixed at present requirements, will also be a natural consequence of the development of the circle.

(*b*).—*General Protection and Breaches of the Forest Law.*

22. The Upper Burma Forest Regulation, No. VI of 1887, together with the rules framed under it, came into force on the 15th August 1887, and steps were, as far as possible, taken at once to make the forest law known and enforce its provisions. This was no easy matter, for in the interval following annexation new markets had sprung up and the requirements of the Railway authorities and the Public Works Department had all given direct encouragement to the people to cut and sell green teak. Along the railway line in the Yamèthin and Meiktila districts green timber was seized and confiscated by order of the Magistrates, who, in consideration of the people having supplied the timber on the demand of Railway officials, were not prepared to inflict any further punishment. A similar and more recent case of a thugyi having cut and extracted green teak logs near the Thabeikkyin and Bernardmyo road at the instigation of the Public Works Officers is under settlement inter-departmentally.

General remarks.

Detail of breaches of forest law in divisions.

23. In all 21 cases were taken to Court; convictions were obtained in 14 cases, involving 57 persons; there was one acquittal, and at the close of the year six cases were pending.

Bhamo and Chindwin divisions.—There were no cases reported as either prosecuted or compounded, and the progress made in enforcing the provisions of the Regulations was not satisfactory.

Mandalay division.—Two men were convicted of having defrauded Government by means of false hammer-marks and punished respectively with five and three years' imprisonment. Some progress was made in working the rules and some illicitly cut timber seized awaited the orders of the Magistrate. It was not considered necessary to bring cases against the offenders to whom the loss of the timber would be a sufficient warning.

Minbu division.—The single prosecution resulted in an acquittal. Four cases of illicit cutch-boiling and three of felling green teak were compounded, Rs. 58 being paid as compensation.

Mu division.—Five cases of illicit felling of green teak were successfully prosecuted and the timber confiscated; one similar case of a petty nature was compounded, and two cases of refusal to stop at the revenue station were similarly disposed of.

Pyinmana division.—Thirteen cases were taken to Court, seven were disposed of during the year, convictions being obtained in each instance; six cases were pending at the close of the year. Offences such as boiling cutch and extracting wood-oil without licenses were compounded and Rs. 249 were realized as compensation. The number of these offences has not been reported.

Yaw division.—No attempt, I regret to say, was made to enforce the provisions of the Regulation and rules up to the close of the year.

The above naturally is no complete return of the offences committed. Numbers of necessity have passed undetected, and in cases of detection the general rule has been to explain the law and dismiss the offenders with a warning. The somewhat superfluous detail recorded under this head has seemed desirable in order to show that, instead of the department having imposed the Regulation and rules hurriedly on a people ignorant of the provisions, as has been suggested, there has been rather a tardiness and an excessive leniency in their application.

(*c*).—*Forest Fires.*

Unsuccessful attempt to fire-protect by village agency.

24. In the Pyinmana division an attempt was made to induce the villagers, who were in very poor circumstances owing to the loss of their plough cattle, to protect a considerable and well-defined tract in which the bamboo had recently flowered and there was good natural reproduction of teak. They were promised reasonable payment for any labour employed on fire-lines and a further reward of Rs. 500 if they succeeded. They readily agreed, but actually did nothing and the entire area was burnt over.

(*d*).—*Experiments and Exotics.*

Establishment of nurseries, and introduction of Himalayan species and English fruit trees.

25. Nurseries have been laid out at both Bernardmyo (6,500 feet) and Mogôk (4,100 feet), and by the civility of Forest Officers in the Punjab, who were permitted to send seeds direct, many Himalayan species have been introduced.

Pinus longifolia sown at Mogôk has succeeded perfectly and the beds show unbroken lines of healthy plants.

Deodar has germinated freely at Bernardmyo and some 700 plants were flourishing when the rains set in.

Abies Smithiana has only partially succeeded.

Abies Webbiana has germinated well, but the plants do not appear very healthy.

Pinus Gerardiana.—A few plants only have been raised, but these appear robust.

Pinus excelsa has not come up as well as might have been expected, but there is a fair number of plants.

A few walnut plants only have been raised. A large number of *Eucalyptus* seeds have germinated; the species are not known. *Acer-pictum*, *villosum*, *caudatum*, and *cæsium* have all been sown, but as yet they have not germinated. *Celtis caucasica*, *Carpinus viminea*, *Melia azedarach* have also succeeded. Seeds of other kinds have been sown, but have for the most part failed. A few plants of the indigenous oaks, chestnuts, &c., are being raised for observation and study.

Five hundred apple, pear, peach, apricot, plum, and nectarine grafts were obtained from the Ranikhet nursery. Of these almost all the stocks bore the journey and took root, but many of the grafts, especially of stone fruit, had died in transit. One hundred and forty-nine, chiefly apples and pears, have taken and may be considered established.

(*e*).—*Communications and Buildings.*

Office and house accommodation.

26. In order to provide accommodation for offices and shelter for officers themselves buildings with substantial posts and framework have been constructed wherever required. For the present they have been thatched and walled in with matting. Later on shingles and boarded walls can be substituted, and the houses will fulfil all requirements. The total expenditure under Buildings was Rs. 7,560.

Bhamo division.—A site for the forest-house was fixed upon and the building was in hand at the close of the year.

Chindwin division.—A house and office combined was built at Alôn at a cost of Rs. 1,998. Revenue station offices and out-houses cost small sums.

Mandalay division.—Small native houses were built or acquired at small cost at the revenue stations of Ava and Nandawkyun.

Minbu division.—The house at Minbu cost Rs. 1,740. A small guard-house was built at the revenue station of Zigat.

Mu division.—At Ye-u a mere temporary building cost Rs. 500, and Rs. 400 were expended on a revenue station-house and stockades.

Pyinmana division.—A house was built at Pyinmana at a cost of Rs. 1,824.

CHAPTER IV.

YIELD AND WORKING.

(*a*).—*Girdling.*

Trees girdled in Chindwin forests.

27. Trees girdled by licensees under proper authority and in accordance with rules have been entered in Form No. 53.

Messrs. The Bombay Burma Trading Corporation, Limited, were permitted to girdle up to 37,000 teak trees in the Upper Chindwin forests, and of these 26,500 are reported to have been killed in localities detailed in Appendix D.

No trees were girdled by Government agency.

(b).—*Removal of Timber by Licensees under Agreements with the late King.*

Statement of licenses acquired from the late Burmese Government.

28. The undermentioned forests are burdened with rights acquired by the following licensees from the late Burmese Government to cut and remove, on certain yearly payments, teak for export :—

Name of licensee.	Name of forest.	Year of expiration of lease.	Remarks.
Messrs. The Bombay Burma Trading Corporation, Limited.	Pyinmana	1896	With a period of grace within which to extract felled and neaped timber.
	Chindwin	1899	
	Mu	1899	
	Taungdwingyi	1899	
	Theingôn	1899	
	Yaw, &c.	1899	
	Malun-Myedo	1890	
	Pyaungshu	1903	
Executors of Mr. Walker and U Kawi.	Myittha-Panlaung (Hlaingdet) ...	1889	
Maung Mun Htaw and Maung Bauk.	Forests drained by tributaries of the Irrawaddy on both banks from Mandalay to above Bhamo.	1895	
Ko Tu	Mogaung	1893	

Proposed recognition of licenses under certain conditions.

29. It was proposed to continue these rights to the holders under new agreements, substituting a system of payment on the timber actually extracted for the yearly lump-sum payments and enforcing the provisions of the Regulation and Rules as regards girdling, felling of green teak, and all other matters connected with the working of the forests. The actual terms of these new agreements were the subject of lengthy and protracted negotiation throughout the year, but were not finally concluded.

Previous history of the working of the Pyinmana forests, with outturn of past 10 years.

30. The following is reported with regard to the previous history of the Pyinmana forests :—

"The extraction of teak for export from the Pyinmana forests was first commenced about the year 1855 by a man named Louis. It is probable that at first the timber was only for the consumption of towns along the Sittang river. In 1859 the Burmese Government took the working of the forests into its own hands. The timber was taken down to the frontier and there sold, the chief purchasers being Messrs. Chrismen, Mai Tun, and Wallace, who afterwards worked in the capacity of Government thitgaungs or foresters. Mr. William Wallace was the founder of the Bombay Burma Trading Corporation, Limited, who in 1866 leased the Pyinmana forests from the Burmese Government, sending up Messrs. Darwood and Goldenberg as their agents, and finally taking over the direct management of the forests in 1881.

"The number of logs extracted from the forests is given below, beginning from the year 1878 :—

Year.	Number of logs.	Tonnage.
1878	26,883 ..	27,000
1879	24,735 ..	25,000
1880	20,601 ..	21,000
1881	31,775 ..	32,000
1882	27,075 ..	27,500
1883	33,216 ..	33,500
1884	27,600 ..	28,000
1885	61,265 ..	63,000
1886	17,557 ..	18,000
1887	23,488 ..	26,962
Total ..	294,195	301,962

that is, an average annual outturn of 29,000 logs."

Yield of forests held by Messrs. The Bombay Burma Trading Corporation during the past two years.

31. The yield of the forests held by Messrs. The Bombay Burma Trading Corporation for the past two years has been in timber exported to Lower Burma:—

		1886-87.			1887-88.	
		Logs.	Tons.		Logs.	Tons.
Pyinmana	Full-sized	...	9,837	full-sized ...	18,233	23,088
	Under-sized	...	3,456	under-sized...	5,255	3,874
Chindwin		21,302	23,482 (estimated)	full-sized	6,085	7,185
				under-sized	1,800	1,269
Mu				full-sized	965	1,178
				under-sized	365	238
Theingôn		*Nil*	...	full-sized	1,058	1,085
				under-sized	561	418
Pyaungshu		*Nil*	...	full-sized	334	374
				under-sized	125	107
Yaw		*Nil*	...	...	*Nil*	
Taungdwingyi, ...	Full-sized	...	1,148	full-sized	408	428
				under-sized	169	115
Mindôn Mahin ...	Under-sized	...	383		*Nil*	
Total ...		...	38,256			
Add logs in transit not brought to account—						
Chindwin		598	664 (Estimated.)			
Mu		6				
Taungdwingyi		16	18			
Pyaungshu		44	48			
		...	780			
GRAND TOTAL ...		...	38,986		35,448	39,359

For the outturn from the different forests of logs exported during the year I am indebted to the courtesy of Mr. Andrews, the chief representative of the Corporation in Rangoon, as the logs from different forests were not kept entirely separate in the returns at Allanmyo. The figures have not been compared with the totals of the measurement statements made out at Allanmyo and Toungoo. This comparison and an adjustment of the year's accounts have been deferred partly because it was hoped the final agreement would be entered into and partly because the Conservator has had no convenient opportunity of visiting Rangoon, where the books of the Corporation and timber accounts of the Pegu circle are available for reference and comparison.

No account was taken of local sales by the Corporation in 1886-87. Those for 1887-88, inclusive of timber made over to Government under Rule 21, and upon which no tonnage duty is leviable, are reported to have amounted to 1,039 tons as entered in Form 51, but until the complete year's accounts have been made up in communication with the representatives of the Corporation and accepted, these figures are liable to alteration.

Yield of forests held by executors of late Mr. Walker and U Kawi.

32. The outturn during the year of the forests granted to the late Mr Walker and U Kawi, and which was floated down together with the Bombay Burma Trading Corporation timber in mixed rafts, has been similarly obtained and shows—

	Tons.
807 full-sized logs	811
433 under-sized logs	268
1,240	1,079

Local sales from the same forests are returned as 108 tons, but these figures are also liable to modification, the licensees having undertaken to furnish a statement of timber locally disposed of.

Yield of forests held by Maung Mun Htaw and Maung Bauk.

33. Maung Mun Htaw and Maung Bauk floated 2,255 logs, say 2,706 tons, past Mandalay, and they had numbers of logs adrift and in transit below. They are, however, reported to have only taken 1,207 logs below Prome and Allanmyo.

Yield of Mogaung forest held by Ku Tu.

34. From the Mogaung forests, the working of which was only commenced by Ko Tu with some 60 elephants during the year under review, 33 small logs, estimated at 13 or 14 tons, were extracted and sold locally.

(c)—Removal of Timber and Produce by Local Purchasers.

(1). *Timber.*

Outturn in timber removed by local purchasers.

35. As per detail given in Form 54, 32,873 tons of logs, posts, scantlings, &c., of the reserved kinds were removed and brought to revenue stations. This timber was almost exclusively teak, that of other kinds amounting to a few hundred tons only.

Timber of the unreserved kinds was extracted to the extent of 2,309 tons exclusive of that in the shape of firewood and charcoal, of which it is estimated the equivalent of 17,570 tons was brought to Mandalay.

The following table shows the timber brought to the revenue stations of the different divisions; that shown opposite Mandalay came almost exclusively from the forests on either side of the Irrawaddy as far up stream as Bhamo:—

Division.	Teak.	Other reserved kinds.	Unreserved kinds.	Firewood.	Charcoal.	Revenue.
	Tons.	Tons.	Tons.	Tons.	Tons.	Rs.
Bhamo	978	...	121	...	...	3,157
Chindwin	2	...	409	1	...	674
Mandalay	30,646	188	1,605	15,764	1,731	1,19,206
Minbu	41	...	...	...	...	277
Mu	591	...	22	...	...	2,068
Pyinmana	400	22	152	...	74	8,120
Yaw	10	...	...	...	...	31
Export duty from Lower Burma.	...	...	...	...	...	8,602
Payment made by licensees	...	...	...	...	...	1,12,000
Total ...	32,663	210	2,309	15,765	1,805	2,49,135

(2). *Minor Forest Produce.*

Outturn of minor forest produce.

36. The revenue derived from minor forest produce fell very much short of expectations. The disturbed state of the country resulted in little being extracted and in several directions prevented proper arrangements being made for the levy of Government dues. The year's results are exhibited in the following statement:—

Division.	Bamboos.	Cutch licenses.	Rubber.	Canes.	Thitsi licenses.	Wood-oil licenses.	Shaw fibre.	Miscellaneous.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bhamo				*Nil.*					
Chindwin ...	2,978	80	75	859	...	...	...	...	3,942
Mandalay ...	11,103	...	...	832	...	...	...	...	11,935
Minbu ...	...	12,107	...	...	...	4	14	8	12,133
Mu	1,082	...	...	12	481	...	...	...	1,575
Pyinmana ...	2,412	...	...	...	...	255	...	...	2,667
Yaw				*Nil.*					
Total ...	17,575	12,187	75	1,703	481	259	14	8	32,252

(*d.*)—*Free Grants.*

Issue of written permits for free timber.

37. Under free grants three entries appear in Form 54; they represent—

(1) 41 tons of teak timber used by Messrs. The Bombay Burma Trading Corporation for building rest-houses;

(2) 35 tons of teak timber granted free of duty to the Reverend Father Laurent for repairs to a chapel, and 4 tons to Mira Saib to build a mosque, both grants being made in the Mu division;

(3) 253 tons of teak granted on written orders to the people of the Chindwin, who were under the misunderstanding that they were not free to use even dead wood for local consumption without permission.

(*e*).—*Summary of Yield.*

Total outturn.

38. The total outturn of the year in timber and firewood, expressed in cubic feet, was as follows:—

	Teak.	Other reserved kinds.	Unreserved.	Firewood and charcoal.	Total.
By Government agency	5,922 *	...	...	...	5,922
By late King's licensees	2,215,220	...	...	...	2,215,220
By local purchasers	1,688,120	10,455	115,451	878,515	2,687,541
Passed to Lower Burma, paying import duty.	48,036	120	...	...	48,156
Under free grants	16,660	...	...	...	16,660
Total ...	3,918,958	10,575	115,451	878,515	4,923,499

* This represents confiscated timber noticed under confiscated drift, &c.

Minor forest produce brought in a total of Rs. 32,252.

(*f*).—*Confiscated, Drift and Waif.*

(*1*). *Confiscated.*

Detail of timber confiscated.

39. In the Pyinmana division 118 tons of green teak logs with some scantlings and sleepers were seized in the forests and confiscated by order of the Courts. These were brought to the depôts at Yamèthin and Pyawbwè, and appear in Form 54 as extracted by Government agency.

Other seizures were made, and the timber affected was either being held pending the Magistrate's orders or arrangements could not be made for its being brought to depôt.

(*2*). *Drift.*

Detail of drift operations.

40. The collection of drift was not attended with much success. Men could not be found to undertake the work at moderate rates. Registration of property-marks could only be insisted upon after the Regulation came into force; and any sort of control over the use of hammer-marks could only be gradually introduced. The result was that much unmarked timber and timber to which local people had no proper claim fell into their hands, and after passing through several more or less *bonâ fide* transfers for consideration reached a revenue station and had to be passed into the market centres on payment of the local duty.

In all 1,642 logs were collected, and of these 475 were made over to claimants, 662 were sold, and 505 were undisposed of at the close of the year.

(3). *Yaw Timber.*

Timber from the Yaw forests claimed by *ex*-licensee.

41. From the Yaw forests and streams 1,452 logs were received and detained at the Zigat revenue station. The former licensee's agreement and periods of grace for the extraction of felled and stranded timber having lapsed, this timber became the property of Government under the terms of agreement with the late King, and on arrival in the Irrawaddy river there should have been no question as to the ownership. The *ex*-licensee and his creditors have, however, thought fit to hotly contest the Government right to the timber and, declining to accept the ruling of the Government of India, are understood to have appealed to the Secretary of State. At the close of the year 1,424 only of these logs were under detention, 28 having broken adrift during a storm. This timber appears under a separate heading in Form No. 56.

(g).—*Exports, &c.*

Exports to Lower Burma and removal passes.

42. Beyond the timber exported by licensees referred to above, 961 tons of teak and 2 tons of padauk paid import duty into Lower Burma at the old frontier. Removal and rafting passes were either issued from, or checked at, all revenue stations, and control over timber in transit was fairly well established.

Property-marks were registered almost exclusively for teak timber and brought in Rs. 7,540.

CHAPTER V.

FINANCIAL RESULTS.

Explanation of year's income.

43. The financial results of the year were as follows:—

			Rs.
Revenue	...	... ...	2,96,876
Expenditure	A 44,218	... ...	1,21,152
	B 76,934		
		Surplus ...	1,75,724

The revenue includes the following lump-sum payments by lessees:—

	Rs.
Maung Mun Htaw and Maung Bauk's last half-year's instalment, year 1887 ...	50,000
Ko Tu's Mogaung forest payment for the year 1887	50,000
Executors of late Mr. Walker and U Kawi, year 1887	12,000
Total ...	1,12,000

But no credit has been taken in the accounts for timber extracted by the Bombay Burma Trading Corporation and which at tonnage rates of Rs. 10 and Rs. 6 on full and under-sized logs respectively would represent an income of about Rs. 3,75,000, nor has the one lakh of rupees derived from the sale of the Mogaung rubber lease disposed of by the Civil authorities been credited to the department.

The revenue locally collected amounted to Rs. 1,84,876 and was chiefly derived from timber brought from the forests of the Bhamo division to Mandalay. Firewood at Mandalay yielded Rs. 7,806, bamboos on the Chindwin, Mu, and Irrawaddy rivers brought in Rs. 15,163, while other forest produce gave Rs. 17,089, mostly realized on cutch licenses. Rupees 7,804 and Rs. 7,684 were derived respectively from drift operations and miscellaneous, chiefly hammer registrations and rafting passes.

Remarks on the expenditure.

44. The expenditure calls for little notice. Under the main heading A, Conservancy and Works, with a total expenditure of Rs. 44,218, the only considerable item is Rs. 22,595, representing the cost of 20 elephants purchased. B, Establishments, cost Rs. 76,934. The expenditure was less than anticipated by Rs. 63,000. This

was consequent on the non-arrival of controlling officers, which led to the postponement of the opening out of revenue stations and delay in the entertainment of subordinate establishments.

CHAPTER VI.

General Remarks.

(1) *Mr. Aplin's Deputation to the Shan States.*

Mr. Aplin's deputation to the Shan States.

45. Mr. Aplin, Deputy Conservator of Forests, was deputed to accompany the Southern Shan Expeditionary Column, and leaving Fort Stedman on the 22nd November he was unfortunately compelled by illness to return to that place on the 18th January, having left the column at Monè. The route taken down the Balu valley south and then north and east across the Tapet, Pun, and Taing chaungs to Maukmè and Maingpan passed through no teak forests of importance until the valley of the Nampan chaung was reached. This is a feeder of the Taing chaung, on the banks of which Maingpan is situated. The valleys of the Balu, Tapet, and Pun chaungs were crossed at altitudes above the natural teak zone, and any forests of importance must be farther to the south. There was evidence of teak forests lying to the north of the route in the shape of good logs stranded in the Taing chaung between Kolenbauk and Tanunkè, while a fine forest and teak-producing land was found all along the banks of the Nampan chaung from Sawa to Maingpan. This forest is much cut up by taungya-cultivation, but still contains much marketable teak. It is not certain whether its preservation is due to the action of the Sawbwa, who is reported to have kept it for local requirements, or to obstructions in the streams.

The return journey *viâ* Monè lay at an elevation beyond the limit of teak forest.

Information collected from different sources by Mr. Aplin.

46. In addition to the observations made Mr. Aplin was able to obtain a considerable amount of useful, if second-hand, information regarding the forests in the following territories :—

(*a*) Karenni (Po Bya's).	(*d*) Maingpan.
(*b*) Thatôn and Tapet.	(*e*) Kyaingtung.
(*c*) Maukmè.	(*f*) Maingpu.

As Mr. Aplin's report together with two maps has been separately submitted with the recommendation that it be printed further notice of it is unnecessary here.

Mr. C. W. Palmer's visit to the jade-mines and Indawgyi.

47. From the 29th December to the 4th March Mr. C. W. Palmer, Deputy Conservator, accompanied the expedition to the jade-mines and Indawgyi. He reports good teak forest in the neighbourhood of Sinbo and to the east and north of it as far as the Mogaung chaung. Nothing of interest was seen between the point where the Mogaung chaung was first reached and Mogaung itself. The Nampin chaung near Kamein is said to drain a teak forest of average quality. Two marches from Kamein a few *Ficus elastica* were observed, all showing marks of having been tapped, and similar trees continued to be met with along the entire road to the Uru chaung.

No India-rubber trees were found on the way to Indawgyi; they are said to grow in the forests two days' distant from the lake, where, though not forming pure forests, they are very numerous. Mr. Palmer writes that there are two kinds, an evergreen (*Ficus elastica*) and a deciduous tree (*Ficus laccifera ?*). Both are tapped and both seem to yield equally good rubber.

Collection of revenue on India-rubber.

48. So far the right to purchase rubber in the Mogaung district has been farmed out by the Civil authorities and a lakh of rupees was realized for the year, October 1887 to October 1888. Rubber is purchased at Mogaung at Rs. 180 and sells in Rangoon for Rs. 400—450 per 100 viss (1 viss=3½lbs.), so

that its intrinsic value in the forests is considerable, and when the forests can be reached and taken in hand they must yield a handsome revenue. So long as the forests are inaccessible there seem to be only three ways by which revenue can be realized,—

(1) by the present system of farming out the right to purchase in the Mogaung district;

(2) Government might undertake the purchase of all rubber from the Kachins at Mogaung, despatch it to Rangoon, and there sell it by auction;

(3) the trade with the Kachins might be thrown open to every one and a duty levied on all rubber brought past Bhamo, a forest revenue station.

The third alternative has been tried and is in force on the Chindwin, by which river a certain amount of rubber is brought down, chiefly from the Uru valley. The result of having the two systems has been a dispute as to the boundaries of the Mogaung district and charges of rubber having been smuggled from that district to the Chindwin. It will doubtless be convenient to adopt the same system for both districts and, in the case of the monopoly being continued, to put both up to auction together; but there is much to be said in favour of establishing an open market and taking the Government dues in the shape of a duty.

Mr. Rind's visit to the Yaw and Myittha forests.

49. Mr. Rind, Deputy Conservator of Forests, placed in charge of the Yaw division in December, was occupied for several months in accompanying the Yaw expedition. It took him over into the valley of the Mau, a tributary of the Myittha, and on to Gangaw; but as the line of march was close to the banks of the streams he made but few observations of interest. The formation and proper organization of the division could not be arranged for in his absence, and little was done before the close of the year.

Elephants.

50. Notwithstanding that every care was taken in the purchase of 20 elephants, and that they were marched up for distribution from the Toungoo and Shwegyin districts under charge of the best men procurable, the losses have been very heavy. Three had died up to the close of the year and one, lost in the Shwegyin district, was supposed to have been misappropriated and become irrecoverable. Of two animals received by transfer from the Civil authorities one died in the Chindwin in February. So that of 22 acquired only 17 remained at the close of the year.

Up to the end of the rains it was not known what animals would be procurable by transfer from other departments, and the newly purchased elephants obtained in November had to undergo the long march up country and be at once thrown into work. Their attendants were untried, the men who started from Lower Burma refusing for the most part to remain; they could only be moved with escorts and rarely turned loose with safety. Under the circumstances some casualties were to be expected, though not the high percentage reported above and which since the close of the year has been raised by more deaths.

Transport.

51. The question of transport for officers, their escorts, and the necessary rations is most difficult. The country where the forests lie is hilly, almost pathless, and trying to baggage animals of any sort. Mules undoubtedly are the best wherever there is a path, but they are liable to be stopped by swampy ground or the rocky beds of streams or fallen trees such as elephants would climb over. Locally in the vicinity of the forests all that is procurable on hire is a very limited number of coolies and these only are actually available if the state of their crops permits of their leaving home. It is considered that the work can only be properly carried on without interruption by allowing three or four elephants to each division and by insisting on Divisional Officers supplementing this means of transport wherever possible by hire and such well-planned arrangements as will allow of rations being sent on ahead or stored at central places. This will necessitate the upkeep of at least 30 elephants entirely for transport purposes until such time as escorts can be dispensed with.

52. The Conservator desires to acknowledge the material and cordial help that has been so readily given by Mr. Popert, the Conservator of the Pegu circle, his officers, and subordinates. They have carried out the whole of the work connected with the passing and measuring of timber (some 38,777 logs) at the frontier stations without any assistance from this circle, and they have always been ready to afford help in any way.

Acknowledgment of assistance given by the officers and establishments of the Pegu circle.

53. The health of officers has not been good. Mr. Aplin was sent back from the Shan States very ill and had to go home on furlough. Mr. Calthrop, Mr. Muriel, and the writer of this report have all suffered from constant attacks of fever.

Health of officers.

MANDALAY:
The 11th July 1888.

H. C. HILL,
Conservator of Forests, Upper Burma Circle.

APPENDICES.

ANNUAL FORM NO. 49 [PRESCRIBED].—*Area of Protected Forests for 1887-88.*

Division	Range.	Civil district or territory.	Name of forest.	Area on 1st April 1887. Acres.	Area on 1st April 1887. Equivalent in square miles.	Added during the year. Acres.	Excluded or transferred to other heads. Acres.	Area on 31st March 1888. Acres.	Area on 31st March 1888. Equivalent in square miles.	No. and date of notification or transfer.	Remarks.
Bhamo	North-west ...	Bhamo ...	Sinbo	...	...	...	...	...	...	...	There is a large quantity of teak in all these forests.
			Mogaung	...	...	...	...	...	...	...	
			Mohnyin	...	...	...	...	...	...	...	
	South-east ...	Do. ...	Sinkan	...	...	...	...	...	...	...	Teak grows in all these forests.
			Moyu	...	...	...	...	...	...	...	
			Nampa	...	...	...	...	...	...	...	
	South-west ...	Myadaung	Kónkwe	...	...	...	...	...	...	...	
			Shweli...	...	...	...	...	...	...	...	
		Do. ...	Meza	...	...	...	...	...	...	...	There is said to be teak in these forests.
Chindwin ...	...	Upper Chindwin	Uru	...	...	...	...	Unknown ...	Unknown ...	...	
			Nanthamyit	...	...	...	...	Do. ...	Do. ...	...	
			Nankamu	...	...	...	...	Do. ...	Do. ...	...	
			Henu	...	...	...	...	Do. ...	Do. ...	...	
			Sunda	...	...	...	...	Do. ...	Do. ...	...	
			Yu	...	...	...	...	Do. ...	Do. ...	...	
			Kodan	...	...	...	...	Do. ...	Do. ...	...	
			Nanzalein	...	...	...	...	...	36	...	Probably 50 per cent. indaing, all available for reservation.
			Paluswa	...	...	...	...	...	84	...	
			Nantabin	...	...	...	...	...	60	...	
			Myittha	...	...	...	...	Unknown ...	Unknown ...	...	
			Taungdwin	...	...	...	...	...	600	...	All available for reservation.
			Patalón	...	...	...	...	...	1,000	...	Probably not more than 50 per cent. available for reservation.
			Mahamyaing	...	...	...	...	Unknown ...	Unknown ...	...	
			Thingadón	...	...	...	...	...	100	...	
Mandalay ...	...	Yamèthin-Meiktila ...	Myittha stream	...	...	...	...	...	200	...	
		Kyaukse	Panlaung stream ...	...	...	...	...	...	250	...	
		Do.	Zawgyi stream	...	...	...	...	Unknown ...	Unknown ...	...	
		Mandalay ...	Myitnge and Pyaungshu streams.	...	...	...	...	Do. ...	Do. ...	...	
		Ditto	Medaya stream	...	...	...	...	Do. ...	Do. ...	...	
		Ruby Mines ...	Ditto	...	...	...	...	Do. ...	Do. ...	...	
Minbu	Taungdwingyi ...	Taungdwingyi	Yabè	...	...	...	...	...	...	...	
			Kyaukmigyaing	...	...	...	...	...	250	...	
			Bankón...	...	...	...	...	...			
			Kinmóntaung	...	...	...	...	...			
			Nganin	...	...	...	...	...	250	...	
			Sadóng	...	...	...	...	...			
			Sun	...	...	...	...	...	300		
			Lebu	...	...	...	...	...			
			Ye-u	...	...	...	...	...	Unknown ...	...	
			Pin	...	...	...	...	...	Do. ...	...	
	Sadóktaya ...	Minbu ...	Man	...	...	...	...	...	Do. ...	...	
			Món	...	...	...	...	...	Do. ...	...	
			Salin	...	...	...	...	...	Do. ...	...	

Mu		Ye-u	Yabin	...	...	...	...	...	56	...	The forest is situated at the sources of the Yabin chaung and consists of thitya, pyinkado, ingyin, and in, with teak scattered throughout, especially to be met with in ravines. It is intended proposing that it be reserved.
			Pyaungthwè	...	...	...	...	...	72	...	Ditto. The forest is situated at the sources of the Pyaungthwè.
			Maingwun	...	...	...	...	...	60	...	Ditto. The forest is situated at the sources of the Minewun.
		Suwebo	Hnetpyitdaung	...	...	...	...	...	Unknown ...	...	There is said to be a good deal of padauk. Teak is also found chiefly on the hills. The trees are small.
		Kawlin	Thaw...	...	...	...	...	...	Do. ...	...	Abundance of teak and padauk in these forests.
			Daungyo	...	...	...	...	...	Do. ...		
Pyinmana	Myinbyin	Pyinmana	Yeni	...	...	...	...	...	80	...	These are extensive undemarcated forest tracts, protected by the rules under Chapter IV of the Regulation, from which the reserves of the division will be selected.
			Myinbyin	...	...	...	...	...	185		
	Madawbin	Pyinmana	Yôubin ...	...	...	...	...	...	130		
			Palwè ...	...	...	...	...	...	100	...	
			Kain ...	...	...	...	...	...	45	...	
	Taungnyo	Pyinmana	Ngaleik	...	...	...	...	...	100	...	
			Taungnyo	...	...	...	...	...	130	...	
	Shwemyo	Pyinmana	Pozantaung	...	...	...	...	...	80		The grand total of the protected area in the Pyinmana district may be taken as about 700,000 acres, of which 80 per cent. or 560,000 is teak-producing.
			Paunglaung	...	...	...	...	...	Unknown ...	...	
			Sinthè ...	...	...	...	...	...	Do. ...		
	Kyinzu	Yamèthin	Myohla ...	...	...	...	...	...	20		
			Shwemindin	...	...	...	...	...	20		
			Kyinzu ...	...	...	...	...	...	20		
	Yaw	Pagan	Mau-Myittha	...	...	...	...	...	375	...	
			Kyaw ...	...	...	...	...	...	150	...	
			Yaw ...	...	...	...	...	...	400	...	
			Total estimated area of known protected forests.	...	...	...	...	...	5,153	...	
			AREA OF UNCLASSED FORESTS FOR 1887-88.								
Mandalay	Ruby Mines sub-division.	Ruby Mines	Cheintaung	...	...	...	...	...	1,000	1	...	Proposed high forest oak, chestnut, thitya, &c.
			Patswè	...	...	...	...	...	600	1	...	Proposed coppice reserve, oak and chestnut.
			Bamain	...	...	...	...	...	960	2		
			B ...	...	...	...	...	...	2,800	4	...	Proposed high forest reserve, partly evergreen, partly oak.
			Kathè ...	...	...	...	...	...	1,000	2	...	Proposed coppice reserve, oak and chestnut.
			Kyapyin	...	...	...	...	...	1,440	2		
			Bernardmyo	...	...	...	...	...	14,366	22	...	Consisting of 10 square miles of evergreen high forest, and the rest oak and chestnut, chiefly advanced coppice. Proposed as a reserve for the benefit of Bernardmyo.
			Total ...	...	...	...	...	...	22,366	35	...	

ANNUAL FORM NO. 50 [PRESCRIBED].—*Prosecutions for Breaches of Forest Rules during the year 1887-88.*

Forest division and civil district.	Cases pending from 1886-87	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of the year.
		Injury to forest by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
								Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Mandalay division—														
Mandalay district	...	...	...	...	2	2	2	2	2	...	...	2	2	...
Minbu division—														
Minbu district	...	...	...	...	1	1	1	...	...	1	1	1	1	...
Mu division—														
Shwebo district	...	...	5	...	...	5	5	5	5	...	...	5	5	...
Pyinmana division—														
Pyinmana district	...	...	12	...	...	12	12	6	15	...	...	6	15	6
Yamèthin district	...	...	1	...	...	1	1	1	35	...	...	1	35	...
Total ...	...	...	18	...	3	21	21	14	57	1	1	15	58	6

ANNUAL FORM NO. 51 [PRESCRIBED].—*Area of Forest Tracts Protected from Fire during Dry Season of 1888 (to accompany report of 1887-88).*

Nil.

ANNUAL FORM NO. 52 [PRESCRIBED].—*Area of Plantations for 1887-88.*

Division.	Name of plantation.	Area in acres.				Receipts	Charges	Remarks.
		On 1st April 1887.	Added during the year.	Excluded during the year.	Area on 31st March 1888.	Of the year.		
	Nurseries for Experiments and Exotics.						Rs.	
Mandalay ...	Bernardmyo	...	·13	...	·13	...	463	
	Mogôk	...	·11	...	·11	...	487	
	Total ...	...	·24	...	·24	...	950	

ANNUAL FORM No. 53 [PRESCRIBED].—*Statement showing Number of Trees Felled or Girdled during the year 1887-88.*

(SELECTION FELLINGS.)

Division.	Trees felled or girdled.		Remarks.
	Description.	Number.	
Chindwin	Teak	26,500	In protected forest tracts.
	Total ...	26,500	

b

ANNUAL FORM NO. 54 [PRESCRIBED].—*Statement of Outturn of Timber and Firewood during 1887-88.*

Division.	Description of material.	Outturn in cubic feet.								Remarks.
		Selection fellings.	Clearances.	Thinnings.	Total.	Removed by Government agency.	Removed by Purchasers.	Removed by Free grants.	Removed by Right-holders.	
	Removed by Lessees of the late King.									
BHAMO	Teak logs, dugyis	...	...	...	...	...	400	...	...	
	Teak logs, yatthits						263			
	Teak logs extracted and sold locally by Ko Tu ...	...	...	...	...	...	15,582	...	...	292 logs and 290 dubbed squares.
CHINDWIN	Teak timber logs sold by lessees locally or made over to Government.	...	...	...	...	...	422,700	...	...	7,975 logs.
	Teak logs floated to Rangoon	...	...	...	...	...	135,300	...	...	2,255 logs at 60 c. ft., estimated.
MANDALAY	Teak logs exported to Lower Burma by Maung Mun Htaw from the Bhamo division.	...	...	...	...	...	99,200	...	...	2,078 logs.
	Teak logs exported by Bombay Burma Trading Corporation, Limited.	...	...	...	...	...	53,950	...	...	1,240 logs.
	Teak logs exported by Mr. Walker and U Ka We	...	...	...	...	...	4,271	...	...	
	Teak logs sold locally by Bombay Burma Trading Corporation, Limited.	...	...	...	...	...	5,387	...	...	
	Teak logs sold locally by Mr. Walker and U Ka We.	...	...	...	...	...	27,150	...	...	572 logs.
MINBU	Teak logs exported to Lower Burma by Bombay Burma Trading Corporation, Limited.	...	...	...	...	...	19,870	...	...	
	Teak logs sold to Public Works Department ...	...	...	...	...	...	70,800	...	...	1,330 logs.
MU ...	Teak logs extracted by Bombay Burma Trading Corporation, Limited.	...	...	...	...	...	502	...	...	
PYINMANA	Teak scantlings, sleepers, &c.	...	...	...	...	...	1,348,100	...	...	23,488 logs.
	Teak logs exported to Lower Burma	...	...	...	...	...	1,462	...	...	
	Teak logs sold to Railway	...	...	...	...	...	3,633	...	...	
	Teak logs supplied to Public Works Department	...	...	...	...	...	6,700	...	...	
	Teak logs sold locally	...	...	...	...	...	...	2,065	...	For rest-houses.
	Used up locally by Bombay Burma Trading Corporation, Limited.									
	Total ...	...	...	...	...	...	2,215,220	2,065	...	
	Removed by other Purchasers.									
BHAMO	Teak dugyis and hlwas	...	...	...	...	...	36,560	...	...	Each 40 c. ft., estimated.
	Teak yatthits, &c.	...	...	...	...	...	8,725	...	...	Each 12½ c. ft., estimated.
	Teak posts	...	...	...	...	...	3,350	...	...	Each 5 c. ft., estimated.
	Jungle-wood posts	...	...	...	...	...	6,050	...	...	Each 5 c. ft., estimated
	Teak timber converted	...	...	...	...	...	100	...	...	
	Teak logs	...	...	...	...	...	...	12,650	...	
	Teak poles	...	...	...	...	...	5	...	...	

CHINDWIN	Unreserved woods—									
	Converted ...	...	...	...	...	...	...	4,70[illegible]	...	...
	Logs ...	...	...	...	...	...	...	12,700	...	...
	Posts and poles ...	...	...	...	...	...	...	3,065	...	...
	Firewood ...	...	...	...	...	...	...	50	...	...
	Teak converted ...	...	...	...	...	...	...	1,220	...	...
	Teak dugyis and hlwas ...	...	...	...	...	...	...	906,960	...	...
	Teak yatthits, &c. ...	...	...	...	...	...	...	341,882	...	...
	Teak posts ...	...	...	...	...	...	...	282,135	...	...
	Teak cart-wheels ...	...	...	...	...	...	...	138	...	...
	Padauk axles ...	...	...	...	...	...	...	9,376	...	...
MANDALAY	Unreserved woods—									
	Dugyis and hlwas, &c. ...	...	...	...	...	...	...	360	...	...
	Yatthits, &c. ...	...	...	...	...	...	...	24,800	...	...
	Posts ...	...	...	...	...	...	...	55,040	...	...
	Firewood ...	...	...	...	...	...	...	788,192	...	...
	Charcoal ...	...	...	...	...	...	...	86,573	...	...
MINBU	Teak logs ...	...	...	...	...	...	...	800	...	...
	Teak yatthits ...	...	...	...	...	...	...	1,128	...	...
	Teak poles ...	...	...	...	...	...	...	120	...	...
MU	Teak logs, dugyis ...	...	...	...	...	...	...	4,840	1,885	...
	Teak yatthits ...	...	...	...	...	...	...	10,738	...	...
	Teak posts and poles ...	...	...	...	...	...	...	11,435	...	...
	Teak scantlings ...	...	...	...	...	...	...	2,529	60	...
	Unreserved woods—									
	Yatthits ...	...	...	...	...	...	...	50	...	...
	Posts ...	...	...	...	...	...	...	270	...	...
	Scantlings ...	...	...	...	...	...	...	802	...	...
PYINMANA	Teak scantlings, sleepers, &c.	...	...	...	...	...	1,177 *	14,740	...	...
	Teak logs, hlwas ...	...	...	...	...	...	4,745 *	840	...	...
	Teak logs, yatthits ...	...	...	...	...	...	...	2,520	...	...
	Teak posts ...	...	...	...	...	...	...	640	...	...
	Teak cart-wheels ...	...	...	...	...	...	...	740	...	...
	Teak byats ...	...	...	...	...	...	...	500	...	...
	Other reserved kinds—									
	Scantlings ...	...	...	...	...	...	...	229	...	...
	Logs { hlwas	...	...	...	...	...	...	700	...	...
	Logs { yatthits	...	...	...	...	...	...	40	...	...
	Posts ...	...	...	...	...	...	...	40	...	...
	Cart-wheels ...	...	...	...	...	...	...	70	...	...
	Unreserved kinds—									
	Scantlings, &c. ...	...	...	...	...	...	...	3,110	...	...
	Yatthits ...	...	...	...	...	...	...	40	...	...
	Posts ...	...	...	...	...	...	...	4,056	...	...
	Poles ...	...	...	...	...	...	...	460	...	...
	Charcoal ...	...	...	...	...	...	...	3,700	...	...
YAW	Teak logs ...	...	...	...	...	...	...	440	...	...
	Teak yatthits ...	...	...	...	...	...	...	25	...	...
	Teak poles ...	...	...	...	...	...	...	30	...	...
	Total ...			...	...	...	5,922	2,637,541	14,595	...
	Timber exported to Lower Burma upon which duty was taken under section 39 of the Lower Burma Forest Act of 1881.									
	Teak logs ...	...	...	...	...	...	...	37,277	...	...
	Teak posts ...	...	...	...	...	...	...	892	...	...
	Teak planks ...	...	...	...	...	...	...	297	...	...
	Teak wheels ...	...	...	...	...	...	...	5,466	...	...
	Teak byats ...	...	...	...	...	...	...	4,124	...	...
	Padauk logs ...	...	...	...	...	...	...	120	...	...
	Total ...			...	...	...	...	48,156	...	...
	GRAND TOTAL ...			...	...	...	5,922	4,900,917	16,660	...

	Each 40 c. ft., estimated.
	Each 12½ c. ft., estimated.
	Each 5 c. ft., estimated.
	Each 3 c. ft., estimated.
	Each 1 c. ft., estimated.
	Each 40 c. ft., estimated.
	Each 12½ c. ft., estimated.
	Each 5 c. ft., estimated.
	* Confiscated in forests and worked out to Railway line by department.
	Each 40 c. ft., estimated.
	Each 12½ c. ft., estimated.
	Each 5 c. ft., estimated.

ANNUAL FORM No. 55 [PRESCRIBED].—*Statement showing Outturn of Minor Forest Produce during the year 1887-88.*

Division.	Description of produce.		PRODUCE REMOVED OR UTILIZED. By Government agency. Quantity.	By Government agency. Value.	By purchasers. Quantity.	By purchasers. Value.	By free grants. Quantity.	By free grants. Value.	By right-holders. Quantity.	By right-holders. Value.	Total. Quantity	Total. Value.	Remarks.
				Rs.		Rs.		Rs.		Rs.		Rs.	
Chindwin ...	Bamboos	No.	...	...	911,540	2,978	...	...	...	...	911,540	2,978	
	Canes	"	...	...	658,040						658,040		
	Cutch	Viss	...	...	2,000	964	..	...	...	...	2,000	964	
	India-rubber	"	...	...	200						200		
Mandalay ...	Bamboos	No	..	..	4,406,045	11,103	...	...	...	...	4,406,045	11,103	
	Canes	"	...	...	1,308,500	832	...	...	...	...	1,308,500	832	
Minbu ...	Cutch	Viss	...	...	.....	12,107	...	...	...	...	.....	12,107	
	Wood-oil	"	...	...	2	4	...	...	...	...	2	4	
	Pwenwet	"	...	...	3	6	...	...	...	...	3	6	
	Charcoal	"	...	...	4	2	...	...	...	...	4	2	
	Shaw fibre	"	...	...	.....	14	...	...	...	...	.....	14	
Mu ...	Bamboos	No.	...	...	295,950	1,082	5,050	...	...	...	301,000	1,082	
	Canes	"	...	...	7,300	493	...	...	...	...	7,300	493	
	Thitai licenses	"	...	...	241						241		
Pyinmana ...	Cutch — Under licenses	Viss	...	...	11,750	2,350	...	...	...	...	17,950	2,412	
	Cutch — Extracted without licenses, compensation charged.	"	...	...	620	62							
	Wood-oil. — Under licenses	Viss	...	...	1,700	68	...	...	...	...	5,440	255	
	Wood-oil. — Extracted without licenses, compensation charged.	"	...	...	3,740	187							
	Total ...		...	...	.....	32,252	...	...	...	...	.....	32,252	

ANNUAL FORM NO. 56 [PRESCRIBED].—*Account of Timber and other Produce Cut or Collected by Government Agency and brought to Sale Depôts or Sold locally during the year 1887-88.*

Particulars.	Number or quantity.	Cubic feet.	Total of each head. Number or quantity.	Total of each head. Cubic feet.
RECEIVED FROM FORESTS IN DEPÔTS OR SOLD LOCALLY.				
Teak logs (sold locally) } Confiscated	16	380		
Teak logs ... } Confiscated	302	4,356		
Teak scantlings } Confiscated	304	765		
Teak sleepers } Confiscated	300	412		
			1,012	5,923
Drift teak	1,642	56,675		
			1,642	56,675
Timber from Yaw forests held to have lapsed to Government and detained pending orders.	1,452	58,080		
			1,452	58,080
Total ...	...	...	4,106	120,677
Removed by Purchasers from Depôt.				
Teak logs	860	21,640		
Sleepers	220	300		
			1,080	21,940
Sold Locally.				
Teak logs	16	380		
			16	380
Made over to Claimants.				
Teak logs	475	18,470		
			475	18,470
Accidentally drifted away.				
Teak logs	28	1,120		
			28	1,120
Balance at close of the year.				
Mandalay—				
Teak logs	206	11,258		
			206	11,258
Minbu—				
Teak logs...	209	8,360		
Teak timber from Yaw forests held to have lapsed to Government and detained pending orders.	1,424	56,960		
			1,633	65,320
Pyinmana—				
Teak logs	104	1,294		
Teak scantlings	304	765		
Teak sleepers	80	112		
			578	2,171
Total ...	...	...	4,106	120,677

ANNUAL FORM NO. 57 [PRESCRIBED].—*Abstract showing the Value of Timber and other Produce at Sale Depôts for the year 1887-88.*

Description of timber and other produce.	On hand at commencement of the year. Number.	Cubic feet.	Value.	On hand at close of the year. Number.	Cubic feet.	Value.	Difference in value. In favour of the year.	Against the year.	Remarks.
			Rs.			Rs.	Rs.	Rs.	
Teak logs...	...	...	...	2,033	77,872	57,892	57,892		
Scantlings	...	...	...	304	765	387	387		
Sleepers	...	...	...	80	112	80	80		
Total ...	...	...	...	...	78,749	58,359	58,359	...	

ANNUAL FORM NO. 57A [PRESCRIBED].—*Abstract showing the Value of Live and Dead Stock for the year 1887-88.*

Description of timber and other produce.	On hand at commencement of the year. Number.	Cubic feet.	Value.	On hand at close of the year. Number.	Cubic feet.	Value.	Difference in value. In favour of the year.	Against the year.	Remarks.
			Rs.			Rs.	Rs.	Rs.	
Live-stock	...	...	...	17	...	18,120	18,120	...	
Buildings...	...	...	...	9	...	7,560	7,560	...	
Dead-stock	...	...	...	...	...	4,994	4,994	...	
Total ...	...	...	...	...	...	30,674	30,674	...	

ANNUAL FORM NO. 58 [PRESCRIBED].—*Summary of Revenue of the different Divisions during 1887-88.*

Budget heads—receipts.	Direction.	Mandalay division.	Chindwin division.	Pyinmana division.	Bhamo division.	Mu division.	Minbu division.	Yaw division.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY—									
a Timber	.....	.....	.....	.....	.....	.....	.....	.....	.....
b Firewood and charcoal	.....	.....	.....	.....	.....	.....	.....	.....	.....
c Bamboos	.....	.....	.....	.....	.....	.....	.....	.....	.....
d Sandal-wood	.....	.....	.....	.....	.....	.....	.....	.....	.....
e Grass and other minor produce	.....	.....	.....	.....	.....	.....	.....	.....	.....
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS—									
a Timber	1,20,602	1,11,401	672	3,102	3,157	3,068	277	31	2,41,310
b Firewood and charcoal	.....	7,806	2	18	.....	.....	.....	.....	7,826
c Bamboos	.....	11,103	2,978	.....	.....	1,082	.....	.....	15,163
d Grazing and fodder grass	.....	.....	.....	.....	.....	.....	.....	.....	.....
e Other minor produce	.....	831	964	2,667	.....	493	12,133	.....	17,089
III.—CONFISCATED DRIFT AND WAIF WOOD	.....	506	.....	3,045	.....	.....	4,253	.....	7,804
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT—									
a Duty on foreign timber and other forest produce	.....	.....	.....	.....	.....	.....	.....	.....	.....
b Revenue from shared and private forests	.....	.....	.....	.....	.....	.....	.....	.....	.....
V.—MISCELLANEOUS—									
a Fines and forfeitures	.....	.....	.....	.....	.....	.....	.....	.....	.....
b Refunds	.....	.....	.....	.....	.....	.....	.....	.....	.....
c Other sources	.....	5,752	.....	.....	1,900	32	.....	.....	7,684
Total ...	1,20,602	1,37,399	4,616	8,832	5,057	3,676	16,663	31	2,96,876

CALCUTTA:
The 22nd June 1888.

J. TAYLOR,
Assistant Comptroller-General (Forests).

ANNUAL FORM NO. 58 [PRESCRIBED].—*Summary of Expenditure of the different Divisions during 1887-88.*

Budget heads.	Direction.	Mandalay division.	Chindwin division.	Pyinmana division.	Bhamo division.	Mu division.	Minbu division.	Yaw division.	Total.
A.—CONSERVANCY AND WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY GOVERNMENT AGENCY—									
a Timber	.....	.....	.....	.....	.....	.....	.....	.....	.....
b Firewood and charcoal	.....	.....	.....	.....	.....	.....	.....	.....	.....
c Bamboos	.....	.....	.....	.....	.....	.....	.....	.....	.....
d Sandal-wood	.....	.....	.....	.....	.....	.....	.....	.....	.....
e Grass and other minor produce	.....	.....	.....	.....	.....	.....	.....	.....	.....
II.—TIMBER AND OTHER PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS OR PURCHASERS—	565	94	91	.....	.....	.....	.....	.....	750
III.—CONFISCATED DRIFT AND WAIF WOOD	.....	572	26	216	.....	.....	1,776	.....	2,500
IV.—REVENUE FROM FORESTS NOT MANAGED BY GOVERNMENT—									
a Duty on foreign timber and other forest produce	.....	.....	.....	.....	.....	.....	.....	.....	.....
b Revenue from shared and private forests	.....	.....	.....	.....	.....	.....	.....	.....	.....
V.—RENT OF LEASED FORESTS AND PAYMENTS TO SHAREHOLDERS IN FORESTS MANAGED BY GOVERNMENT.	.....	.....	.....	.....	.....	.....	.....	.....	.....
VI.—LIVE-STOCK, STORES, TOOLS AND PLANT—									
a Purchase of cattle	12,200	.....	.....	10,395	.....	.....	.....	.....	22,595
b Feed and keep of cattle	978	296	202	373	.....	.....	137	73	2,040
c Purchase of stores, tools and plant	3,693	106	28	182	64	100	44	.....	4,237
VII.—COMMUNICATIONS AND BUILDINGS—									
a Roads and bridges	.....	.....	.....	.....	.....	.....	.....	.....	.....
b Buildings	11	173	2,563	1,834	329	900	1,740	.....	7,560
c Other works	878	.....	38	6	.....	.....	.....	.....	952
VIII.—DEMARCATION, IMPROVEMENT, AND EXTENSION OF FORESTS—									
a Demarcation	.....	27	.....	.....	.....	.....	.....	.....	27
b Compensation for land and rights	.....	.....	.....	.....	.....	.....	.....	.....	.....
c Surveys and working plans	498	547	461	223	.....	113	150	1	1,993
d Sowing and planting	130	820	.....	.....	.....	.....	.....	.....	950
e Protection from fire	.....	.....	.....	.....	.....	.....	.....	.....	.....
f Other works	1	14	.....	.....	.....	.....	.....	.....	15
IX.—MISCELLANEOUS—									
a Refunds	.....	3	.....	.....	49	.....	.....	.....	52
b Law charges	.....	.....	.....	2	.....	.....	.....	.....	2
c Other charges	236	114	17	20	3	40	41	15	476
Total A.—Conservancy and Works	19,180	2,766	3,446	13,241	465	1,153	3,878	89	44,218
B.—ESTABLISHMENTS.									
I.—SALARIES—									
a Conservators	15,106	.....	.....	.....	.....	.....	.....	.....	15,106
b Superior officers	4,800	5,502	5,902	4,850	3,442	4,600	3,260	2,405	34,761
c Subordinate forest and depôt establishments	.....	1,807	623	1,409	202	315	633	.....	4,989
d Office establishments	3,439	1,990	624	765	316	730	457	63	8,404
e Deputation and special allowances	.....	.....	.....	.....	.....	.....	.....	.....	.....
II.—TRAVELLING ALLOWANCES—									
a Conservators	2,584	.....	.....	.....	.....	.....	.....	.....	2,584
b Superior officers	1,701	969	677	1,254	182	933	1,566	1,023	8,325
c Subordinate forest and depôt establishments	.....	.....	111	.....	.....	33	1	.....	145
d Office establishments	493	55	175	140	38	55	114	15	1,088
III.—CONTINGENCIES—									
a Stationery	64	5	.....	2	.....	.....	4	.....	75
b Carriage of tents and records	10	3	.....	12	.....	.....	19	30	74
c Rents, rates, and taxes	.....	267	23	.....	.....	.....	.....	.....	290
d Pay of police guards	.....	.....	.....	.....	.....	.....	.....	.....	.....
e Official postage	62	3	5	10	5	1	14	10	110
f Sundries	484	17	103	160	41	23	115	20	963
Total B.—Establishments	28,743	10,638	8,243	8,702	4,236	6,493	6,373	3,596	76,934
GRAND TOTAL OF EXPENDITURE	47,923	13,404	11,689	21,943	4,691	7,646	10,181	3,675	1,21,152

CALCUTTA:
The 22nd June 1888.

J. TAYLOR,
Assistant Comptroller-General (Forests).

ANNUAL FORM NO. 59 [PRESCRIBED].—*Account-current for the year 1887-88.*

Dr.

	Rs. A. P.	Rs. A. P.
To Cash balance	.....	
„ *VIII—Assessed Taxes—*		
Income-tax deductions from salaries	.....	8 2 5
Revenue as per Annual Summary Form No. 58	.....	2,96,876 2 5
To Service Funds—		
Civil Fund, ordinary, Bengal	.....	
Civil Fund, additional, Bengal	.....	
Military Fund, Bengal	.....	
Military Fund, Madras	.....	
Military Orphan Fund, Bengal	.....	
Uncovenanted Service Family Pension Fund, Bengal ...	610 13 0	
Uncovenanted Service Family Pension Fund, Bombay ...	127 11 0	
General Family Pension Fund	.....	
Hindu Family Annuity Fund	.....	
To Deposits	.....	738 8 0
„ *Forest Cash Remittances (Local)—*		
Forest cheques drawn	1,03,602 13 6	
Inter-divisional transfers	24,963 14 11	
		1,28,566 12 5
To Advances recoverable	.....	17,262 0 10
Suspense	.....	1,00,286 9 6
„ *Account-current (other Governments)—*		
Remittances from Government of India	.....	305 10 3
To Inter-departmental Transfers—		
Public Works Department	.....	
Military Department, Bengal	430 0 0	
To Civil Department—	Rs. A. P.	
Jail	18 12 3	
Mathematical Instrument Department ...	1,476 2 0	
Miscellaneous	10 0 0	
		1,504 14 3
Marine Department		758 4 10
		2,693 3 1
Total ...	.....	5,46,737 0 11

Cr.

	Rs. A. P.	Rs. A.
By Expenditure as per Annual Summary Form No. 58	.....	1,21,151 10 4
„ Deposits	.....	
By Forest Cash Remittances (Local)—		
Remittances to treasuries	2,93,425 10 8	
Inter-divisional transfers	4,541 13 4	
		2,97,967 7 0
By Advances recoverable	.....	20,124 0 6
„ Suspense	.....	1,00,286 4 4
By Account-current (other Governments)—		
Remittances to the Government of India	.....	195 0 0
By Inter-departmental Transfers—		
Public Works Department	.....	3,931 6 10
Military Department	.....	
Civil Department	.....	
By Cash balance	.....	3,081 3 11
Total ...	.....	5,46,737 0 11

CALCUTTA:
The 22nd June 1888.

J. TAYLOR,
Assistant Comptroller-General (Forests).

ANNUAL FORM No. 60 [PRESCRIBED].—*Revenue received and Outstandings on account of Revenue during 1887-88.*

Division.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the department at end of year.	Remarks.
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Bhamo	Revenue received during 1887-88	...	5,056 9 0	5,056 9 0	5,056 9 0	...	
Chindwin	Ditto	...	4,615 15 9	4,615 15 9	4,615 15 9	...	
Mandalay	Ditto	...	1,37,399 8 6	1,37,399 8 6	1,37,399 8 6	...	
Minbu	Ditto	...	16,663 2 9	16,663 2 9	16,663 2 9	...	
Mu	Ditto	...	3,675 8 1	3,675 8 1	3,675 8 1	...	
Pyinmana	Ditto	...	8,961 13 9	8,961 13 9	8,831 12 1	130 1 8	From Messrs. MacGregor and Co.
Yaw	Ditto	...	31 8 0	31 8 0	31 8 0	...	
Direction	Ditto	...	1,20,602 2 3	1,20,602 2 3	1,20,602 2 3	...	
	Total ...	...	2,97,006 4 1	2,97,006 4 1	2,96,876 2 5	130 1 8	

ANNUAL FORM No. 61 [PRESCRIBED].—*Statement of Outstandings and Liabilities on account of Contractors and Disbursers for 1887-88.*

Division.	Department debtor.			Department creditor.			Balance due.		Remarks.
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To department (outstandings).	By department (liabilities).	
	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Direction	...	8,861 9 10	8,861 9 10	...	10,401 12 8	10,401 12 8	1,540 2 10	...	
Minbu	...	1,852 4 3	1,852 4 3	...	2,142 6 0	2,142 6 0	290 1 9	...	
Mandalay	...	4,734 12 9	4,734 12 9	...	5,282 13 2	5,282 13 2	548 0 5	...	
Chindwin	...	693 6 0	693 6 0	...	722 4 0	722 4 0	28 14 0	...	
Pyinmana	...	1,060 0 0	1,060 0 0	...	1,314 12 8	1,314 12 8	254 12 8	...	
Bhamo	...	...	...	...	200 0 0	200 0 0	200 0 0	...	
Mu	...	60 0 0	60 0 0	...	60 0 0	60 0 0	...	...	
Total ...	...	17,263 0 10	17,262 0 10	...	20,124 0 6	20,124 0 6	2,861 15 8	...	

CALCUTTA :
The 22nd June 1888.

J. TAYLOR,
Assistant Comptroller-General (Forests).

ANNUAL FORM NO. 62 [PRESCRIBED].—*Statement showing the Financial Results of the year 1887-88.*

Division.	Timber and other produce removed from the forests by Government agency.		Other revenue.		Formation, protection, and improvement of forests.	Total.		Remarks.
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Bhamo	.....	.....	5,057	5,337	5,773	5,057	11,110	
Chindwin	.....	.....	4,616	8,650	9,459	4,616	18,109	
Mandalay	.....	.....	1,37,400	9,037	10,787	1,37,400	19,824	
Minbu	.....	.....	16,663	8,005	8,595	16,663	16,600	
Mu	.....	.....	3,675	6,757	7,306	3,675	14,063	
Pyinmana	.....	.....	8,832	13,851	14,510	8,832	28,361	
Yaw	.....	.....	31	4,828	5,265	31	10,093	
Direction	.....	.....	1,20,602	2,992	...	1,20,602	2,992	
Total ...	.....	.....	2,96,876	59,457	61,695	2,96,876	1,21,152	

APPENDIX A.

Statement exhibiting the Cost of Feed of Elephants of the Forest Department for the official year 1887-88 as compared with that of the Commissariat Department for the same period.

Division.	Number of elephants received during the year.	Casualties during the year.	Number of elephants at close of the year.	Cost of feed.	Cost of keep, including gear, &c.	Cost of medicine.	Total expenditure for the year.	Average monthly cost per animal of the Forest Department.	Average monthly cost per animal of the Commissariat Department.	Amount paid by officers for carriage elephants.	Value of labour in cash receipts and work performed.	Remarks.
				Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Bhamo	3	...	3	.....	.....	.....	.....	.....	.....	.....	.....	Were still *en route* for the division.
Chindwin	2	1	1	.....	176 13 0	24 12 0	201 9 0					
Mandalay	2	...	2	.....	291 4 6	4 0 0	295 4 6					
Minbu	2	...	2	.....	133 0 0	.....	133 0 0	30 4 9	99 11 0	*Nil.*	.....	
Mu	2	...	2	.....	.....	.....	.....	.....	.....	.....	.....	Were still *en route* for the division.
Pyinmana	3	2	1	.....	372 8 0	6 6 0	378 14 0					
Yaw	2	...	2	.....	73 8 8	.....	73 8 8					
Direction	6	2	4	.....	959 10 2	18 8 0	978 2 2					
Total ...	22	5	17	.....	2,006 12 4	53 10 0	2,060 6 4	30 4 9	99 11 0	*Nil.*	.....	

APPENDIX B.

UPPER BURMA.

List of Buildings of which the Cost exceeds Rs. 200 and for Occupation of which no Rent is paid.

Division.	No.	Name of building.	Station.	Remarks.
Chindwin	1	Forest bungalow	Alón.	
Minbu	1	Ditto	Minbu.	
Mu	1	Ditto	Ye-u.	
Mu	1	Revenue station-house	Taloksо.	
Pyinmana	1	Forest bungalow	Pyinmana.	

APPENDIX C.

Statement showing Summary of Valuation Surveys during the year 1887-88.

District.	Name of forest	Area in acres counted out.	Teak trees counted out. Green. I.	Green. II.	Green. III.	Green. IV.	Girdled. I.	Girdled. II	Girdled. III.	Girdled. IV.	Stumps.	Padauk.	Pyingado.	Thingan.	Kaunghmu.	Remarks.
Upper Chindwin, Mingin.	Taungdwin	1·25	4	6	11	32	...	...	...	...	...	...	...	...	...	
		·93	...	2	21	18	...	...	...	...	...	...	...	...	...	
		1·00	2	5	21	43	...	...	...	...	...	...	...	...	...	
		1·00	...	10	6	20	...	...	...	...	...	...	...	...	...	
		1·00	1	6	13	18	1	...	...	...	...	...	...	...	...	
	Total ...	5·18	7	29	74	130	...	...	...	...	...	...	...	...	...	
	Per acre ...	...	1·0	6·0	14·0	25·0	...	...	...	...	...	...	...	...	...	
			46·0				0·0									
Upper Chindwin, Thaungdut.	Paluswa	145	128	112	94	70	85	...	...	...	11	...	...	...	...	
		50	70	52	50	15	47	...	...	...	5	...	...	...	...	
	Total ...	195	196	164	144	85	132	...	...	...	16	...	...	...	...	
	Per acre ...		1·0	·8	·7	·4	·68	...	...	...	·08	...	...	...	...	
			3·0				0·8									
	Gopsintaung	35	17	13	35	105	17	...	...	...	94	...	112	...	...	
	Per acre ...	...	·5	·4	1·0	3·0	0·5	...	...	...	2·7	...	3·2	...	...	
			4·9				2·11									
	Zayitin	39	10	9	19	309	25	...	...	...	106	21	153	...	...	
	Per acre ...	...	0·3	·2	·4	7·9	·6	...	...	...	2·7	0·5	3·9	...	...	
			7·18				2·13									
	Palaung	50	2	3	3	205	4	...	...	...	73	91	300	...	...	
	Per acre ...	...	0·0	0·0	0·0	4·1	0·0	...	...	...	1·4	1·8	6·0	...	...	
			4·1				1·4									
	Ladahan	17	2	4	8	9	1	...	...	...	28	...	...	...	...	
	Per acre ...	...	0·1	0·2	0·5	0·5	0·0	...	...	...	1·6	...	...	...	...	
			0·13				1·6									
	[illegible]gangyi	119	17	16	16	186	4	...	...	...	152	100	278	...	...	
			0·1	0·1	0·1	1·6	0·0	...	...	...	1·3	0·8	2·3	...	...	
			1·9				1·3									
Hlaingdet	Between the Thalun and Taunglebin villages ...	60	2	4	13	14	...	...	...	...	9	23	102	...	...	
	Per acre ...	...	0·0	0·0	0·2	0·2	..	...	...	...	0·1	0·4	1·7	...	...	
			0·4				0·1									
	Forest between Metlan, Petalet, Gnetpyaw, and Kalama streams	67	5	3	5	38	21	...	...	...	55	8	99	...	...	
	Per acre ...	...	0·0	0·0	0·0	0·6	0·3	...	...	...	0·8	0·1	1·5	...	...	
			0·6				0·11									
	Forest between Taunglebin on the Myittha and Kwemasa on the Taungwundwin stream.	52	3	4	...	20	...	...	...	...	20	9	12	...	...	
	Per acre ...	...	0·0	0·0	...	0·4	...	...	...	...	0·4	0·2	0·2	...	...	
			0·4				0·4									
	Nanpanletgyi ... ... Nanpanletgale	47	7	7	6	8	7	...	...	...	22	2	33	...	...	
	Per acre ...	...	0·1	0·1	0·1	0·2	0·1	...	...	...	0·5	0·0	0·7	...	...	
			0·5				0·6									
	Forest from Kwemasa to junction of Wundwin and Myittha rivers.	92	14	1	1	34	...	...	...	..	12	21	66	.	...	
			0·2	0·0	0·0	0·4	...	...	...	...	·1	0·2	0·7	...	..	
			0·6				·1									

YWEGWAN	Forest on Polón and Kubaung streams.	60	2 0·0	... ...	4 0·0	84 1·4	14 0·2	... ...	... ...	... ...	38 0·6	14 0·2	... ...	... ...	... ...	
			1·4				0·8									
	West part of Kyaukni (red stone).	168	1 0·0	2 0·0	5 0·0	70 0·4	10 0·0	... ...	... ...	... ...	14 0·0	... ...	38 0·2	... ...	... ...	
			0·4				0·0									
YE-U	Yabin	25	27	18	37	22	5	9	4	1	...	...	...	...	...	
		57·4	27	13	32	43	12	10	4	1	...	...	...	...	...	
		58·6	20	16	15	1	6	2	...	...	...	...	...	...	...	
		28	13	20	66	27	...	...	2	...	...	...	...	...	...	
		33·6	21	81	150	67	2	3	...	...	...	...	...	...	...	
	Total ...	172·6	106	148	300	180	25	24	10	2	...	...	...	...	..	
	Per acre ...	...	·63	·86	1·74	1·04	·14	·13	·06	·01	...	...	...	...	...	
			4·27				·34									
	Pyaungthwè	10·8	5	10	36	25	3	3	1	...	...	...	...	...	...	
		37·2	21	62	120	52	3	1	1	...	...	...	...	...	...	
		56	56	11	17	14	21	3	...	...	...	...	...	...	...	
		36·8	54	22	24	12	...	...	...	...	...	...	...	...	...	
		31·6	55	20	18	3	3	1	...	...	...	...	...	...	...	
	Total ...	172·4	191	125	215	106	30	8	2	...	...	...	...	...	...	
	Average per acre ...	...	1·10	·72	1·25	·62	·17	·04	·01	...	...	...	...	...	...	
			3·69				·22									
	Minewun	44·4	25	39	42	12	4	2	1	...	...	...	...	...	...	
		80·4	25	20	13	5	3	4	2	...	...	...	...	...	...	
		37·6	37	16	25	19	...	...	...	...	...	...	...	...	...	
		52·2	53	16	15	4	5	3	...	...	...	...	...	...	...	
		56·8	24	25	20	5	6	3	...	...	...	...	...	...	...	
	Total ...	271·4	164	116	120	45	18	12	3	...	...	...	...	...	...	
	Average per acre ...	...	·60	·43	·44	·17	·07	·04	·01	...	...	...	...	...	...	
			1·64				·12									
	Yeni	24·4	39	45	48	149	110	...	...	...	59	...	...	...	...	This portion of forest was better than the average.
	Average per acre ...	...	1·6	1·8	·2	6·1	4·5	...	...	...	2·4	...	...	...	...	Girdled trees in entire forest estimated at 77,000.
			11·5				6·9									
	Myinbyin	72·4	41	56	48	197	51	...	...	...	93	...	...	...	...	Countings along three different lines. About ⅓ of the I class trees imperfectly girdled or Nyaungbats; ⅓ of the girdled trees under-sized; girdled trees estimated 95,000.
		54·8	39	53	62	132	79	...	...	...	53	...	...	...	...	
		26·8	14	36	44	152	16	...	...	...	14	...	...	...	...	
	Total ...	13·4	94	145	154	481	146	...	...	...	160	...	...	...	...	
	Average per acre ...	...	·6	·9	·1	3·1	·1	...	...	...	·1	...	...	...	...	
			5·6				2									
PYINMANA	Yônbin	40	7	17	32	32	16	...	...	...	159	...	...	...	...	Countings in very heavily worked portion; ⅓ girdled trees under-sized; girdled trees estimated 67,000.
	Average per acre ...	...	·2	·4	·8	·8	·4	...	...	...	·4	...	...	...	...	
			2·2				4·4									
	Palwè	39·6	11	25	37	130	4	...	...	...	40	...	...	2	6	Practically worked out, hence few girdled trees, of which ⅓ under-sized I class trees, chiefly Nyaungbats; girdled trees estimated at 64,000.
	Average per acre ...	...	·3	·6	·1	3·3	·1	...	...	...	·1	...	...	0·5	·15	
			5·2				1·1							·2		
	Taungnyo	15·6	17	20	11	97	9	...	...	...	64	...	...	...	...	Forests in parts worked out; ⅓ girdled trees undersized; I class trees very inferior specimens; estimated 80,900 girdled trees remain in forest.
		65·4	28	49	54	107	18	...	...	...	83	...	...	...	...	
	Total ...	81	45	69	65	204	27	...	...	...	147	...	...	...	...	
			·6	·9	·8	2·5	·3	...	...	...	1·2	...	...	...	...	
			4·8				2·1									
	Ngaleik	29·3	17	108	107	131	55	...	...	...	46	...	...	...	...	Nearly ⅔ of the girdled trees under-sized; estimated number of girdled trees left in forest, 96,000.
			·6	3·6	3·6	4·4	1·8	...	...	...	1·5	...	...	...	...	
			12·3				3·3									

APPENDIX D.

Statement of Teak Trees Girdled during 1887-88.

Division.	Revising officer.	By whom girdled.	District.	Locality.	Number of trees.
Chindwin.	Mr. H. Slade, Deputy Conservator of Forests.	Messrs. The Bombay Burma Trading Corporation, Limited.	Upper Chindwin.	Mawlèkyi chaung	5,000
				Mawku chaung	2,000
				Kyamaw chaung	1,000
				Dathwèkyauk chaung } tributaries of Yu chaung ...	3,000
				Yôntin chaung } tributaries of Yu chaung ...	2,000
				Kyauktaing chaung	1,000
				Tamaungtha chaung	1,000
				Nanthanyit chaung } thaungdut, Shan States	1,000
				Nantamaw chaung } thaungdut, Shan States	
				Gawmuna chaung } thaungdut, Shan States	
				Sauda chaung	5,000
				Hewa chaung	4,000
				Tôngyi chaung } tributaries of Taungdwin chaung ...	600
				Kayan chaung } tributaries of Taungdwin chaung ...	900
				Total ...	20,500